

CEMELI JDS8060, JDS8080

JDS8060/JDS8080 Dual Channel Function Arbitrary Waveform Signal Generator User Manual

Brand: CEMELI

1. INTRODUCTION

This manual provides comprehensive instructions for the safe and effective operation of the CEMELI JDS8060 and JDS8080 Dual Channel Function Arbitrary Waveform Signal Generators. Please read this manual thoroughly before using the device to ensure proper functionality and to prevent damage.

The JDS8060 and JDS8080 are advanced signal generators capable of producing a wide range of waveforms, including sine, square, pulse, triangle, and arbitrary waveforms, across two independent channels. They feature high sampling rates and vertical resolution, making them suitable for various testing and development applications.

2. SAFETY INFORMATION

Always observe the following safety precautions to prevent injury or damage to the instrument:

- Ensure the power supply voltage matches the requirements specified on the device.
- Do not operate the device in wet or damp conditions.
- Avoid exposing the device to direct sunlight or extreme temperatures.
- Do not open the device casing; there are no user-serviceable parts inside. Refer all servicing to qualified personnel.
- Use only the accessories provided or recommended by the manufacturer.
- Disconnect power before cleaning or moving the device.

3. PRODUCT OVERVIEW

The JDS8060/JDS8080 series signal generators are designed for precision and versatility. Key features include:

- Dual independent output channels.
- High sampling rate (275MSa/s) and 14-bit vertical resolution.
- Extensive waveform library including sine, square, pulse, triangle, and 99 sets of user-defined arbitrary waveforms.
- Multiple modulation types: AM, FM, PM, ASK, FSK, PSK, PWM.
- Frequency measurement, sweep, and VCO functions.
- Intuitive 2.8-inch color screen display.

3.1 Front Panel Layout

The front panel features the display, control buttons, a rotary knob, and output connectors. Understanding the layout is crucial for operation.

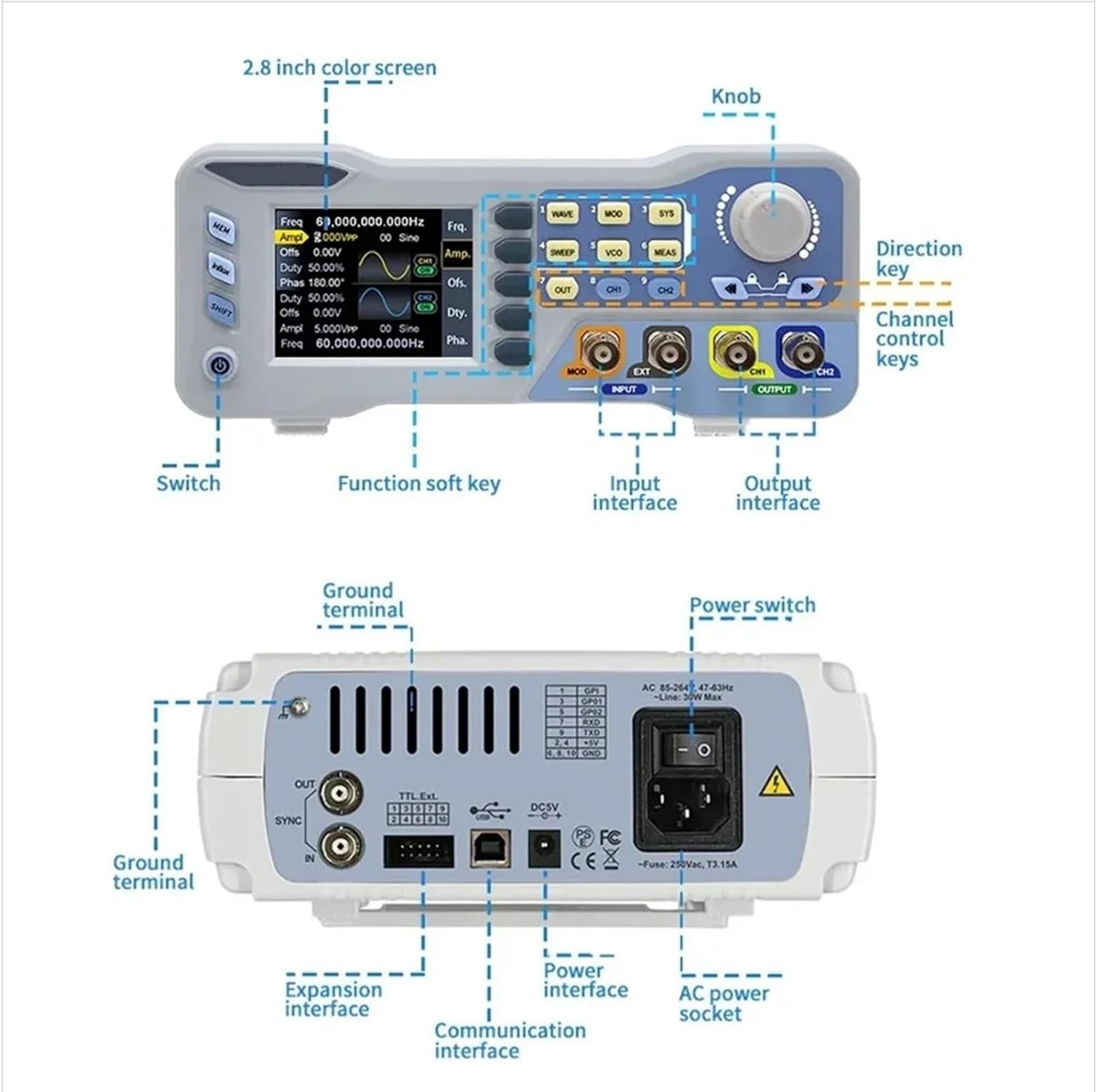


Figure 3.1: Front Panel Overview. This image displays the front of the signal generator, highlighting the 2.8-inch color screen, the rotary knob for adjustments, various function soft keys, direction keys, channel control keys, and the input/output interfaces.

3.2 Rear Panel Layout

The rear panel includes the power input, communication interfaces, and additional control terminals.



Figure 3.2: Rear Panel Overview. This image shows the back of the signal generator, indicating the AC power socket, power switch, communication interface (USB), expansion interface, ground terminals, and SYNC IN/OUT ports.

4. SETUP

4.1 Unpacking and Inspection

Upon receiving your signal generator, carefully unpack all components and inspect them for any signs of damage during transit. Retain the original packaging for future storage or shipping.



Figure 4.1: Product and Accessories. This image displays the signal generator along with its standard accessories, including power cables and BNC cables.

Verify that all items listed in the packing list are present. If any items are missing or damaged, contact your supplier immediately.

4.2 Connecting Power

1. Ensure the power switch on the rear panel is in the OFF position.
2. Connect the provided AC power cord to the AC power socket on the rear panel of the instrument.
3. Plug the other end of the power cord into a grounded AC power outlet. The device supports AC 85-264V, 47-63Hz.

4.3 Connecting Outputs

The device features two independent output channels, CH1 and CH2, located on the front panel.

- Use BNC cables to connect the CH1 and CH2 output ports to your desired load or measurement device.
- The output impedance is 50Ω (typical). Ensure your load impedance matches for optimal signal integrity.

4.4 Initial Power On

1. After connecting power, press the power switch on the rear panel to the ON position.
2. The display will light up, and the device will perform a self-test.
3. Once the self-test is complete, the main interface will be displayed, indicating the device is ready for operation.

5. OPERATING INSTRUCTIONS

5.1 Basic Controls

- **Rotary Knob:** Used for adjusting parameter values. Turn clockwise to increase, counter-clockwise to decrease.
- **Direction Keys:** Navigate through menus and select parameters.
- **Function Soft Keys:** Buttons labeled WAVE, MOD, SYS, SWEEP, VCO, MEAS correspond to different operational modes.
- **Channel Control Keys (CH1, CH2):** Select the active channel for parameter adjustment.
- **OUT Button:** Toggles the output of the selected channel ON/OFF.

5.2 Waveform Generation

Press the **WAVE** button to access waveform selection and parameter settings.

- **Sine Wave:** Frequency range 1nHz-60MHz (JDS8060) / 1nHz-80MHz (JDS8080).
- **Square Wave:** Frequency range 1nHz-15MHz. Adjustable duty cycle.
- **Triangle Wave:** Frequency range 1nHz-15MHz.
- **Pulse Wave:** Precisely set duty ratio, pulse width, and cycle time.
- **Arbitrary Waveform:** The device supports 99 sets of user-defined waveforms. Refer to the advanced features section for creating and loading arbitrary waveforms.

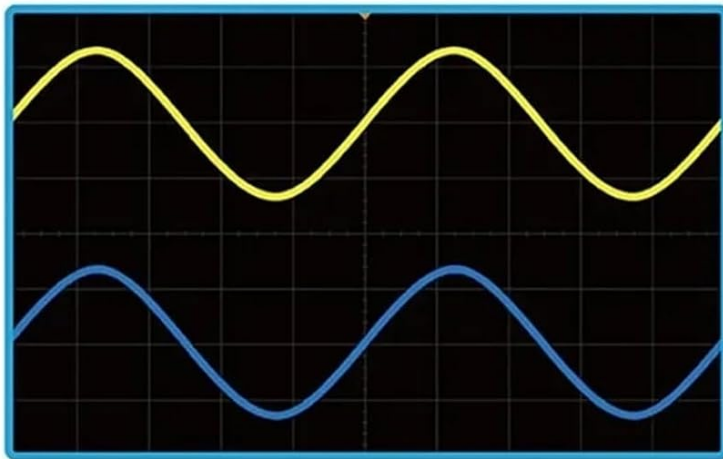
5.3 Adjusting Parameters (Frequency, Amplitude, Offset, Phase)

After selecting a waveform, use the direction keys to highlight the parameter you wish to adjust (e.g., Freq, Ampl, Offs, Phas). Use the rotary knob to change the value.

- **Frequency:** Resolution 1nHz.
- **Amplitude:** Range 2mVpp to 25Vpp (depending on frequency). Resolution 1mVpp.
- **Offset:** Range -9.99V to 12.00V. Resolution 0.01V.
- **Phase:** Adjustable from 0° to 359.99°. Resolution 0.01°.

Phase difference **359.99°** Continuously adjustable

Equal performance dual channel



Dual channels with equal performance, can output arbitrary waveform signals at the same time.

Figure 5.1: Dual Channel Output Example. This image illustrates the capability of the signal generator to output two independent waveforms simultaneously, demonstrating a phase difference between Channel 1 (yellow) and Channel 2 (blue).

5.4 Modulation Functions

Press the **MOD** button to configure modulation settings.

- Supported types: AM (Amplitude Modulation), FM (Frequency Modulation), PM (Phase Modulation), ASK (Amplitude Shift Keying), FSK (Frequency Shift Keying), PSK (Phase Shift Keying), PWM (Pulse Width Modulation).
- Select the desired modulation type and adjust its parameters (e.g., modulation depth, frequency, source) using the rotary knob and direction keys.

5.5 Measurement Functions

Press the **MEAS** button to access the measurement interface.

- The device can measure frequency, positive and negative pulse width, period, and duty cycle of external signals connected to the input.

- Counter range: 0-4294967295.

5.6 Sweep Function

Press the **SWEEP** button to configure sweep parameters.

- The device supports sweep frequency, sweep amplitude, and sweep duty cycle.
- Sweep modes include linear and logarithmic.
- Set start frequency/amplitude/duty, end frequency/amplitude/duty, and sweep time.

5.7 VCO Function

Press the **VCO** button to enable Voltage Controlled Oscillator functions.

- Allows external voltage to control frequency, amplitude, and duty cycle.
- Connect the external control voltage to the appropriate input terminal.

6. MAINTENANCE

6.1 Cleaning

To maintain the appearance and performance of your instrument:

- Wipe the exterior surfaces with a soft, damp cloth.
- Do not use abrasive cleaners or solvents, as they may damage the casing or display.
- Ensure the device is powered off and disconnected from the power source before cleaning.

6.2 Storage

When not in use for extended periods:

- Store the instrument in a dry, dust-free environment.
- Avoid extreme temperatures and humidity.
- It is recommended to store the device in its original packaging to protect it from physical damage.

7. TROUBLESHOOTING

This section addresses common issues you might encounter. If the problem persists, contact customer support.

Problem	Possible Cause	Solution
Device does not power on.	Power cord not connected; power switch off; power outlet fault.	Check power cord connection; ensure power switch is ON; test power outlet with another device.
No output signal.	Output channel OFF; incorrect waveform parameters; faulty cable.	Press the OUT button to enable output; verify frequency, amplitude, and offset settings; check BNC cables.
Display is blank or frozen.	Software error; temporary glitch.	Power off the device, wait 10 seconds, then power on again. If issue persists, contact support.

Problem	Possible Cause	Solution
Incorrect waveform shape.	Incorrect parameter settings; load impedance mismatch.	Review waveform parameters (e.g., duty cycle for square/pulse); ensure load impedance is 50Ω.

8. SPECIFICATIONS

Parameter	JDS8060	JDS8080
Channels	2	
Sine Wave Frequency	1nHz - 60MHz	1nHz - 80MHz
Sampling Rate	275MSa/s	
Waveform Length	8192 points/channel	
Vertical Resolution	14 bits	
Square Wave Frequency	1nHz - 15MHz	
Triangle Wave Frequency	1nHz - 15MHz	
Frequency Resolution	1nHz	
Rise/Fall Time	20nS	10nS
Amplitude Range	<1MHz: 2mVpp~25Vpp <11MHz: 2mVpp~10Vpp <60MHz: 2mVpp~5Vpp 60MHz-80MHz: 2mVpp~3.6Vpp (JDS8080 only)	
Amplitude Resolution	1mVpp	
Offset Range	-9.99V - 12.00V	
Offset Resolution	0.01V	
Phase Adjustment Range	0° - 359.99°	
Output Impedance	50Ω (typical)	
Modulation Types	AM, FM, PM, ASK, FSK, PSK, PWM	
Measurement Functions	Frequency, positive/negative pulse width, period, duty cycle	
Sweep Function	Sweep frequency, amplitude, duty; Linear/Logarithmic modes	
VCO Function	Frequency, amplitude, duty cycle control	
Power Supply	AC 85-264V, 47-63Hz	
Item Weight	50 Grams	
Manufacturer	CEMELI	

9. WARRANTY AND SUPPORT

CEMELI products are designed for reliability and performance. For specific warranty terms and conditions, please refer to the warranty card included with your product or contact your point of purchase. General support information is provided below:

- **Technical Support:** For technical assistance, troubleshooting, or operational questions not covered in this manual, please contact CEMELI customer support.
- **Service and Repair:** Do not attempt to repair the device yourself. Unauthorized repairs will void the warranty. For service or repair, contact CEMELI or an authorized service center.
- **Product Registration:** Registering your product may provide additional benefits and facilitate support. Please visit the official CEMELI website for registration details.

Note: Protection plans may be available for purchase separately. These plans offer extended coverage beyond the standard manufacturer's warranty. Please review the terms of any protection plan carefully.

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ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question