

JDS8060

Generic JDS8060 Dual Channel Function Arbitrary Waveform Generator User Manual

Model: JDS8060 (Item Model Number: CXXABKBZD)

Brand: Generic

1. PRODUCT OVERVIEW

The Generic JDS8060 is a high-performance dual-channel function and arbitrary waveform generator designed for a wide range of applications in electronics testing, education, and research. It features a high sampling rate of 275MSa/s and 14-bit vertical resolution, ensuring precise waveform generation. Both channels offer identical performance and can output various waveforms simultaneously, with adjustable phase differences.

Key Features:

- **Dual Channel Output:** Two independent channels with identical performance, capable of outputting the same or different waveforms simultaneously. Phase difference is adjustable from 0-359.99°.
- **Wide Frequency Range:** Sine wave output from 1nHz to 60MHz.
- **High Sampling Rate & Resolution:** Up to 275MSa/s sampling rate and 14-bit vertical resolution (8192 points), providing accurate waveform data.
- **Multiple Waveform Types:** Generates sine, square, pulse (with adjustable duty ratio, pulse width, cycle time), triangle, rising/falling ramp, CMOS, DC level, half wave, full wave, positive step, inverse staircase, exponential rise/fall, Lorentz pulse, multisonic, random noise, trapezoidal pulse, Sink pulse, and 99 user-defined waveforms.
- **Modulation Functions:** Supports AM, FM, PM, ASK, FSK, PSK modulation on both channels.
- **Scanning Function:** Features frequency, amplitude, and duty cycle scanning with linear and logarithmic modes.

2. PHYSICAL OVERVIEW

The following images illustrate various views of the JDS8060 unit, highlighting its physical design and connection points.



Figure 2.1: Side view of the JDS8060 Function Generator, showing ventilation slots and overall casing design.



Figure 2.2: Opposite side view of the JDS8060 Function Generator, detailing the other side's casing and ventilation.



Figure 2.3: Bottom view of the JDS8060 Function Generator, showing feet and potential mounting points.

3. SETUP INSTRUCTIONS

Follow these steps to properly set up your JDS8060 Function Arbitrary Waveform Generator.



Figure 3.1: Rear panel of the JDS8060 Function Generator, showing power input, output, and control ports.

1. **Power Connection:** Connect the provided AC power cord to the power input socket on the rear panel (refer to Figure 3.1). Ensure the power switch is in the OFF position before connecting. The device supports AC 85-264V, 47-63Hz.
2. **Output Connections:** Connect your test leads or cables to the 'OUT' (Channel 1) and 'SYNC' (Channel 2) BNC connectors on the rear panel for waveform output. The 'IN' BNC connector is for external trigger or modulation input.
3. **TTL.Ext Port:** For external TTL signal input/output, use the TTL.Ext port. Refer to the pinout diagram on the rear panel for correct connections (Pins 1, 3, 5, 7, 9 for GP1, GP01, GP02, GP03, GP04 respectively; Pins 2, 4, 6, 8, 10 for +5V, +5V, GND, GND, GND respectively).
4. **USB Connection:** For PC connectivity and software control, connect a USB cable to the USB port.
5. **DC5V Input:** An auxiliary DC5V input is available for specific applications.
6. **Power On:** Once all connections are secure, switch the power button to the ON position. The device will initiate its startup sequence.

4. OPERATING INSTRUCTIONS

This section provides general guidance on operating the JDS8060. For detailed operation of specific functions, refer to the on-screen menu and dedicated function buttons.

4.1 Basic Waveform Generation

1. **Select Channel:** Use the channel selection buttons (CH1/CH2) to choose the desired output channel.
2. **Select Waveform Type:** Navigate through the menu to select the desired waveform (e.g., Sine, Square, Triangle, Arbitrary).
3. **Set Frequency:** Adjust the frequency using the dedicated frequency controls or numeric keypad. The sine wave frequency range is 1nHz-60MHz.
4. **Set Amplitude:** Adjust the peak-to-peak amplitude (Vpp) for the selected channel. The amplitude range varies with frequency.
5. **Set Offset:** Adjust the DC offset voltage if required.
6. **Enable Output:** Ensure the output for the selected channel is enabled to generate the waveform.

4.2 Advanced Functions

- **Modulation:** Access the modulation menu to configure AM, FM, PM, ASK, FSK, or PSK modulation. Select the modulation source and parameters.
- **Sweep Function:** Utilize the sweep function to vary frequency, amplitude, or duty cycle over a specified range and time. Choose between linear and logarithmic sweep modes.
- **Arbitrary Waveform:** Create and load custom arbitrary waveforms using the device's interface or PC software. The waveform length is 8192 points per channel.
- **Frequency Measurement:** The built-in frequency meter can measure external signals. Connect the signal to the appropriate input and select the measurement function.
- **VCO Function:** The Voltage Controlled Oscillator (VCO) function allows external voltage control of frequency, amplitude, and duty cycle.

5. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your JDS8060 Function Arbitrary Waveform Generator.

- **Cleaning:** Regularly clean the exterior of the device with a soft, dry cloth. For stubborn dirt, use a slightly damp cloth with mild detergent, ensuring no liquid enters the device. Do not use abrasive cleaners or solvents.
- **Ventilation:** Ensure that the ventilation slots on the device are not obstructed to prevent overheating. Operate the device in a well-ventilated area.
- **Storage:** When not in use for extended periods, store the device in a cool, dry place, away from direct sunlight, dust, and extreme temperatures.
- **Cable Inspection:** Periodically inspect all cables (power, BNC, USB) for any signs of damage or wear. Replace damaged cables immediately.
- **Fuse Replacement:** The device uses a 250Vac, T3.15A fuse. If the device does not power on, check and replace the fuse located near the AC power input if necessary. Ensure the device is disconnected from power before attempting fuse replacement.

6. TROUBLESHOOTING

This section addresses common issues you might encounter with your JDS8060.

- **Device does not power on:**

- Check if the power cord is securely connected to both the device and the power outlet.
- Verify that the power outlet is functional.
- Inspect the power fuse on the rear panel and replace if blown (refer to Maintenance section).

- **No output signal:**

- Ensure the output for the selected channel is enabled in the device's menu.
- Check the BNC cables connecting the device to your measurement equipment (e.g., oscilloscope) for proper connection and integrity.
- Verify that the amplitude setting is not set to 0Vpp.
- Confirm that the frequency is within the supported range for the selected waveform.

- **Incorrect waveform displayed:**

- Check the waveform type selection in the device's menu.
- Ensure the frequency, amplitude, and offset settings are correct for the desired waveform.
- If using arbitrary waveforms, verify that the waveform data is loaded correctly.

- **PC software not connecting:**

- Ensure the USB cable is properly connected to both the device and the PC.
- Install the necessary drivers for the device on your computer.
- Check the device manager on your PC to ensure the device is recognized.

7. TECHNICAL SPECIFICATIONS

Parameter	Specification
Model	JDS8060
Channels	2
Sine Wave Frequency Range	1nHz - 60MHz
Square Wave Frequency Range	1nHz - 15MHz
Triangle Wave Frequency Range	1nHz - 15MHz
Sampling Rate	275MSa/s
Waveform Length	8192 points/channel
Waveform Vertical Resolution	14 bits
Frequency Resolution	1nHz
Rise/Fall Time (Square Wave)	≤20nS
Amplitude Range (Frequency < 1MHz)	2mVpp - 25Vpp
Amplitude Range (1MHz ≤ Frequency < 11MHz)	2mVpp - 10Vpp

Parameter	Specification
Amplitude Range (11MHz ≤ Frequency < 60MHz)	2mVpp - 5Vpp
Amplitude Range (60MHz ≤ Frequency ≤ 80MHz)	2mVpp - 3.6Vpp
Amplitude Resolution	1mVpp
Amplitude Stability (@ 1kHz, >10mVpp)	±1% ±1mVpp
Offset Range	-9.99V - 12.00V
Offset Resolution	0.01V
Phase Adjustment Range	0° - 359.99°
Phase Resolution	0.01°
Output Impedance	50Ω (typical)
Modulation Types	AM, FM, PM, ASK, FSK, PSK, PWM
Trigger Source	Manual burst, CH2 burst, external burst (AC), external burst (DC)
Counter Range	0 - 4294967295
Sweep Function	Sweep frequency, sweep amplitude, sweep duty (Linear, Logarithmic modes)
VCO Function	Frequency control, amplitude control, duty cycle control
Power Supply	AC 85-264V, 47-63Hz
Max Power Consumption	30W
Item Weight	5.51 pounds
Item Model Number	CXXABKBZD

8. WARRANTY INFORMATION

Specific warranty details for the Generic JDS8060 Function Arbitrary Waveform Generator are not provided in the product information. Please refer to the seller's or manufacturer's official website, or contact your point of purchase for detailed warranty terms and conditions.

9. CUSTOMER SUPPORT

For technical assistance, troubleshooting beyond this manual, or inquiries regarding your Generic JDS8060, please contact the seller or manufacturer directly. Contact information is typically available on your purchase receipt, the product packaging, or the official website of the retailer/manufacturer.

