

## Luqeeq MHS5200A

# Luqeeq MHS5200A Dual Channel DDS Signal Generator/Counter

Model: MHS5200A | Brand: Luqeeq

## 1. INTRODUCTION

---

The Luqeeq MHS5200A is a versatile Dual Channel DDS (Direct Digital Synthesis) Signal Generator and Counter. This device is designed to generate a wide range of waveforms and accurately measure frequencies, making it suitable for various electronic testing, development, and educational applications. It features two independent output channels and a frequency counter input.

The MHS5200A supports the generation of multiple waveform types, including Sine, Square, Pulse (with adjustable duty cycle and precise pulse width), Triangular, Partial Sine, CMOS, DC Level, Half-wave, Full-wave, Positive Step, Inverse Step, Noise, Exponential Rise, Exponential Fall, Multiple Sound, Cinke Pulse, Lorentz Pulse, and up to 60 user-defined arbitrary waveforms.

## 2. SAFETY INFORMATION

---

Please read and understand all safety instructions before operating the device. Failure to follow these instructions may result in electric shock, fire, or damage to the product.

- **Power Supply:** Use only the specified DC5V power adapter. Using an incorrect power supply can damage the device and pose a safety risk.
- **Environment:** Operate the device in a dry, well-ventilated area. Avoid exposure to moisture, rain, direct sunlight, or extreme temperatures.
- **Ventilation:** Ensure proper ventilation around the device to prevent overheating. Do not block ventilation openings.
- **Handling:** Handle the device with care. Avoid dropping or subjecting it to strong impacts.
- **Maintenance:** Do not attempt to open, disassemble, or repair the device yourself. Refer all servicing to qualified personnel.
- **Connections:** Ensure all connections are secure before powering on the device.

### 3. PACKAGE CONTENTS

---

Upon opening the package, please verify that all the following items are included:

- Luqeeq MHS5200A DDS Signal Generator/Counter Unit
- DC5V Power Adapter
- USB Cable
- BNC to Alligator Clip Cable (Quantity: 2)
- CD with Software/Drivers (if applicable)

If any items are missing or damaged, please contact your vendor or Luqeeq customer support immediately.

### 4. PRODUCT OVERVIEW

---

#### 4.1 Front Panel



**Figure 1:** Front view of the Luqeeq MHS5200A DDS Signal Generator/Counter. This image shows the LCD display, control buttons, rotary knob, and BNC connectors for external input and dual channel outputs.

The front panel provides the main interface for operating the MHS5200A:

- **LCD Display:** Shows current frequency, waveform type, amplitude, duty cycle, and other parameters.
- **Ext.IN:** BNC connector for external frequency input for the counter function.
- **CH1 / CH2:** BNC connectors for Channel 1 and Channel 2 signal outputs.
- **CH1/2 Button:** Toggles between Channel 1 and Channel 2 for parameter adjustment.
- **SET Button:** Enters parameter setting mode or confirms a selection.
- **WAVE Button:** Selects the waveform type (Sine, Square, Pulse, etc.).
- **AMPL Button:** Adjusts the amplitude of the output signal.
- **PgUp / PgDn Buttons:** Used for navigating menus or incrementing/decrementing values.

- **SHIFT Button:** Used in combination with other buttons for secondary functions.
- **OK Button:** Confirms settings or exits a menu.
- **ADJUST Knob:** Rotary encoder for fine-tuning frequency, amplitude, and other parameters.
- **OUT Indicators (CH1, CH2):** LEDs indicating active output channels.

## 4.2 Rear Panel



**Figure 2:** Rear view of the Luqeeq MHS5200A DDS Signal Generator/Counter. This image displays the power switch, DC5V input, USB port, and TTL output.

The rear panel contains essential connections and controls:

- **ON/OFF Switch:** Main power switch for the device.
- **DC5V Input:** Power input port for the DC5V power adapter.
- **USB Port:** For connecting the device to a computer for software control or firmware updates.
- **TTL Output:** Dedicated TTL level output for specific applications.

## 5. SETUP

Follow these steps to set up your Luqeeq MHS5200A:

1. **Connect Power:** Plug the DC5V power adapter into the DC5V input port on the rear panel of the device, then plug the adapter into a suitable power outlet.
2. **Power On:** Flip the ON/OFF switch on the rear panel to the 'ON' position. The LCD display should

illuminate.

3. **Connect to Computer (Optional):** If you plan to control the device via software, connect the USB cable from the device's USB port to your computer. Install any necessary drivers or software from the provided CD or manufacturer's website.
4. **Connect Output Cables:** Connect BNC cables to the CH1 and/or CH2 output ports as needed for your application. Connect the other end of the cables to your oscilloscope, circuit, or other test equipment.
5. **Connect External Input (Optional):** If using the frequency counter function, connect the external signal source to the Ext.IN BNC connector.

## 6. OPERATING INSTRUCTIONS

---

### 6.1 Basic Operation

1. **Select Channel:** Press the **CH1/2** button to select either Channel 1 or Channel 2 for adjustment. The active channel will be indicated on the display.
2. **Select Waveform:** Press the **WAVE** button. Use the **ADJUST** knob to scroll through available waveform types (Sine, Square, Pulse, etc.). Press **OK** to confirm your selection.
3. **Adjust Frequency:** With a waveform selected, the frequency parameter will typically be highlighted. Use the **ADJUST** knob to change the frequency. Press **SET** to change the digit being adjusted for finer control.
4. **Adjust Amplitude:** Press the **AMPL** button. Use the **ADJUST** knob to set the desired output amplitude. Press **OK** to confirm.
5. **Adjust Offset (Bias):** Depending on the waveform, you may be able to adjust the DC offset. This is typically accessed via the **AMPL** button or a combination with **SHIFT**. Use the **ADJUST** knob to set the offset.

### 6.2 Advanced Waveform Settings

- **Pulse Waveform:** When a pulse waveform is selected, you can adjust the duty cycle and pulse width. Press **SET** or **SHIFT + SET** to cycle through these parameters and use the **ADJUST** knob to modify them.
- **Arbitrary Waveforms:** The device supports 60 user-defined arbitrary waveforms. These typically need to be created and uploaded via the PC software. Refer to the software manual for detailed instructions on creating and loading arbitrary waveforms.

### 6.3 Frequency Counter Function

To use the frequency counter:

1. Connect the external signal you wish to measure to the **Ext.IN** BNC connector.
2. Navigate to the counter function mode on the device. This is usually done by pressing a specific button (e.g., **SHIFT + WAVE** or a dedicated 'Counter' button if available) or selecting it from a menu.
3. The display will show the frequency of the input signal.

## 7. SPECIFICATIONS

---

The following are the technical specifications for the Luqeeq MHS5200A DDS Signal Generator/Counter:

Feature	Specification
Brand	Luqeeq
Model	MHS5200A
Max Output Frequency	6 MHz
Sampling Rate	200 MSa/s
Vertical Resolution	12 Bits
Waveform Types	Sine, Square, Pulse, Triangular, Partial Sine, CMOS, DC Level, Half-wave, Full-wave, Positive Step, Inverse Step, Noise, Exponential Rise, Exponential Fall, Multiple Sound, Cinke Pulse, Lorentz Pulse, 60 User-defined Arbitrary Waveforms
Power Supply	DC5V
Interface	USB

## 8. MAINTENANCE

---

Proper maintenance ensures the longevity and reliable operation of your MHS5200A:

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the device. Do not use abrasive cleaners or solvents.
- **Storage:** When not in use, store the device in a clean, dry, and dust-free environment, away from direct sunlight and extreme temperatures.
- **Cable Care:** Inspect all cables (power, USB, BNC) regularly for signs of wear or damage. Replace damaged cables immediately.
- **Avoid Liquids:** Keep the device away from liquids to prevent internal damage.

## 9. TROUBLESHOOTING

---

If you encounter issues with your MHS5200A, refer to the following troubleshooting guide:

- **Device Does Not Power On:**
  - Ensure the DC5V power adapter is securely connected to both the device and a working power outlet.
  - Check if the ON/OFF switch on the rear panel is in the 'ON' position.
  - Verify that the power outlet is functional by plugging in another device.
- **No Output Signal:**
  - Confirm that the correct output channel (CH1 or CH2) is selected and enabled.

- Check the amplitude setting; ensure it is not set to zero.
- Verify that the BNC output cable is securely connected to both the generator and the receiving device (e.g., oscilloscope).
- Ensure the receiving device is properly configured to display the input signal.

- **Incorrect Frequency/Amplitude Readings:**

- Double-check the settings on the MHS5200A's display.
- Calibrate your receiving instrument (e.g., oscilloscope) if necessary.
- Ensure the input signal for the frequency counter (Ext.IN) is within the specified voltage and frequency range.

- **Software Connection Issues:**

- Ensure the USB cable is properly connected.
- Install the correct drivers for the device on your computer.
- Restart both the device and your computer.

If the problem persists after attempting these troubleshooting steps, please contact Luqeeq customer support for further assistance.

## 10. WARRANTY AND SUPPORT

---

The Luqeeq MHS5200A DDS Signal Generator/Counter comes with a standard manufacturer's warranty. Please refer to the warranty card included in your package or visit the official Luqeeq website for detailed warranty terms and conditions.

For technical support, product inquiries, or warranty claims, please contact Luqeeq customer service through the following channels:

- **Website:** Visit the official Luqeeq website for FAQs, support resources, and contact information.
- **Email:** Refer to your product documentation for the customer support email address.
- **Seller Support:** If purchased through a retailer, you may also contact the seller for initial support.

Please have your product model (MHS5200A) and purchase information ready when contacting support.