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TKXEC FG-300

TKXEC FG-300 Function Signal Generator User Manual

Model: FG-300

1. Introduction

The TKXEC FG-300 is a versatile function signal generator designed for various applications requiring precise frequency output. It features an adjustable frequency range from 0.0001Hz to 200KHz, supporting multiple waveform outputs including sine, square, and triangle waves. This device also includes a dedicated 7.83Hz Schumann wave generation capability. Equipped with a high-precision DDS frequency synthesis technology and a clear 1.8-inch TFT LCD display, the FG-300 offers intuitive operation and portability with its built-in rechargeable battery.

2. Safety Information

- Do not expose the device to moisture or extreme temperatures.
- Avoid dropping or subjecting the device to strong impacts.
- Use only the provided USB cable for charging.
- Do not attempt to disassemble or modify the device, as this will void the warranty and may cause damage or injury.
- Keep out of reach of children.

3. Package Contents

Please check the package for the following items:

- 1x TKXEC FG-300 Function Signal Generator
- 1x USB Charging Cable
- 1x Stylus (for keypad operation)
- 1x 4-pin output cable (with loose wires for custom connections)

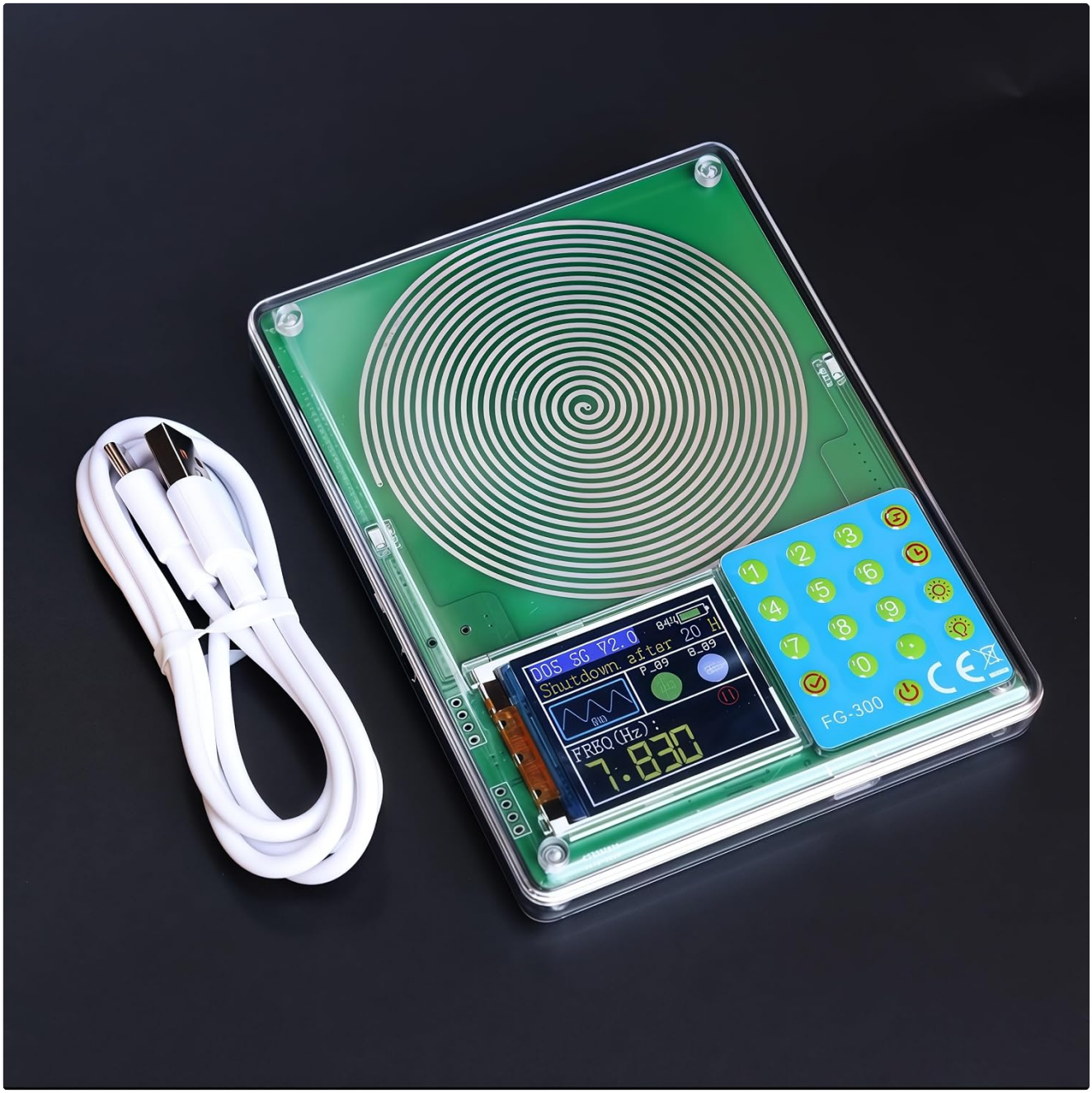


Image 3.1: The FG-300 Function Signal Generator shown with its included USB charging cable.

4. Product Overview

4.1. Device Layout



Image 4.1: Front view of the FG-300, showing the LCD display and numerical keypad.

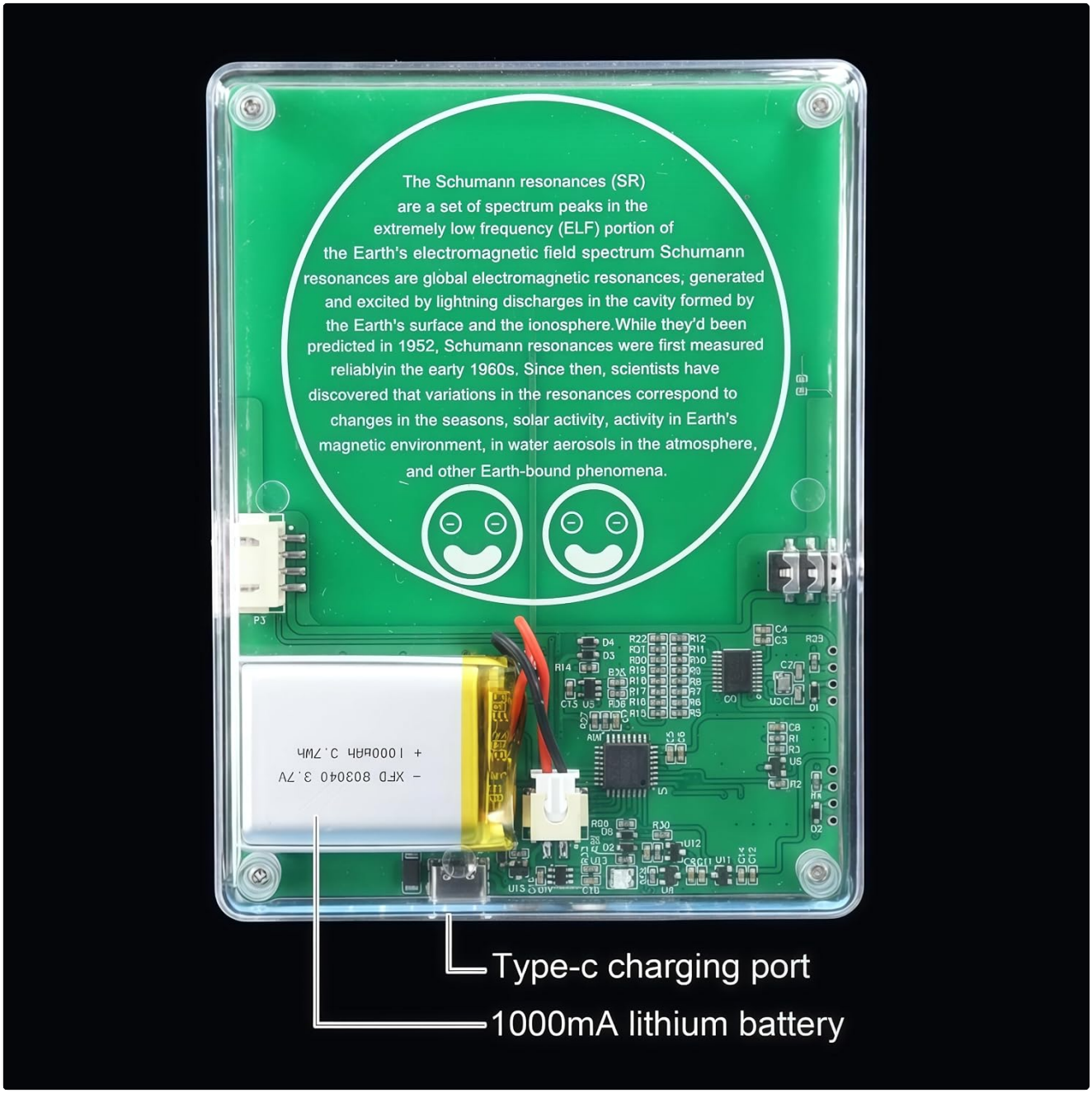


Image 4.2: Back view of the FG-300, revealing the internal 1000mA lithium battery and Type-C charging port.

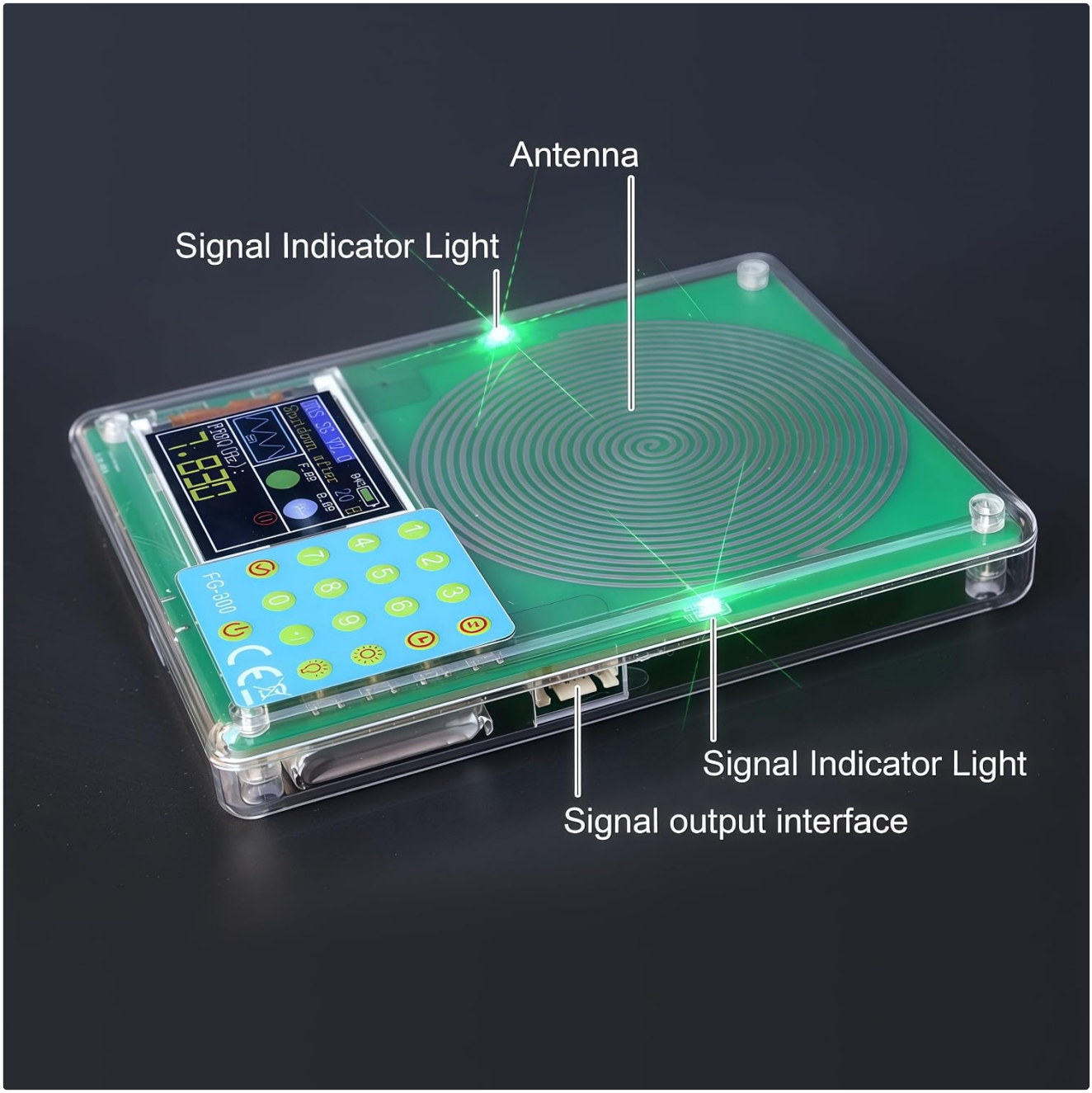


Image 4.3: Side view illustrating the antenna, signal indicator lights, and the signal output interface.

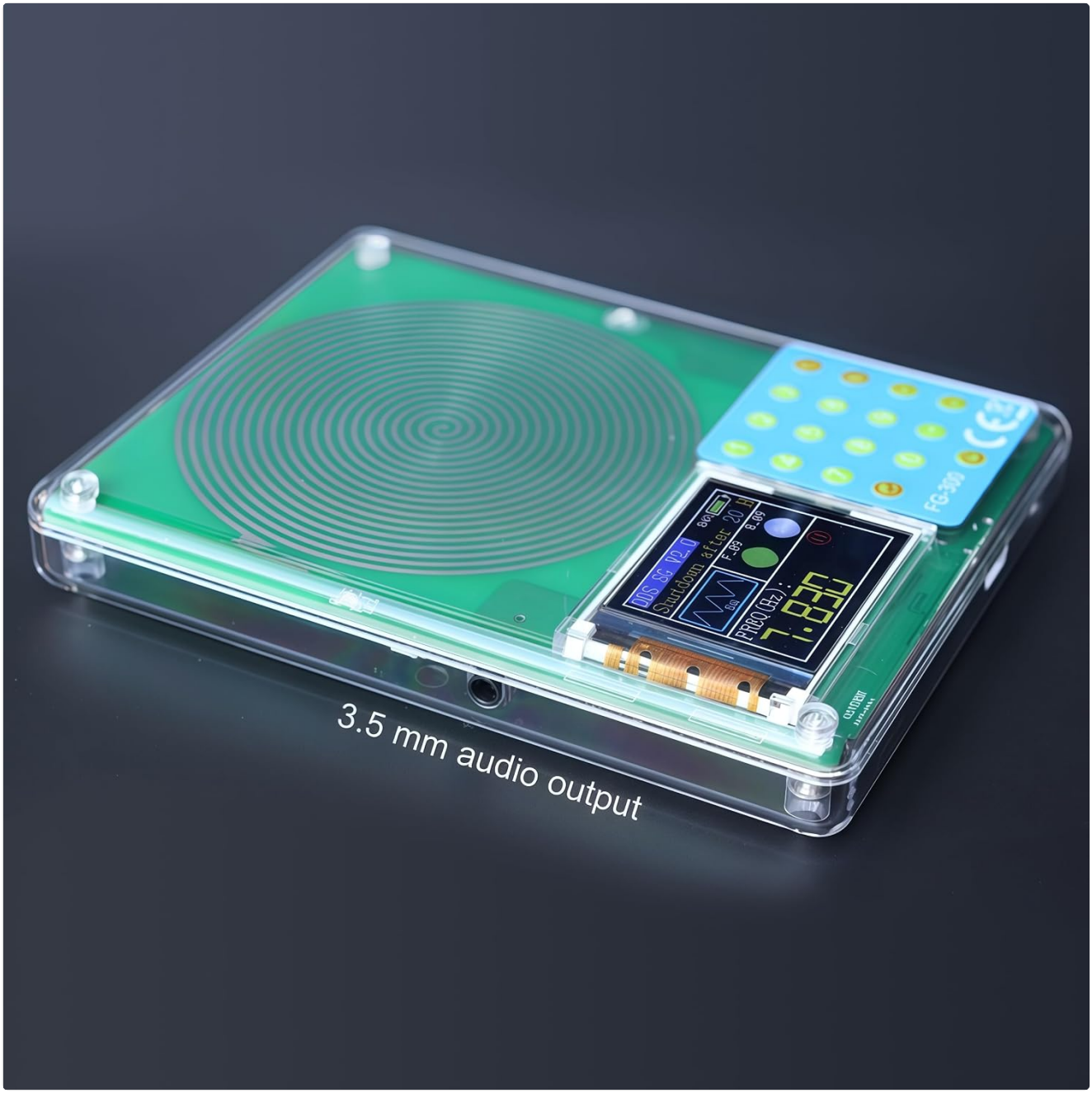


Image 4.4: Side view highlighting the 3.5mm audio output jack.

4.2. Controls and Display

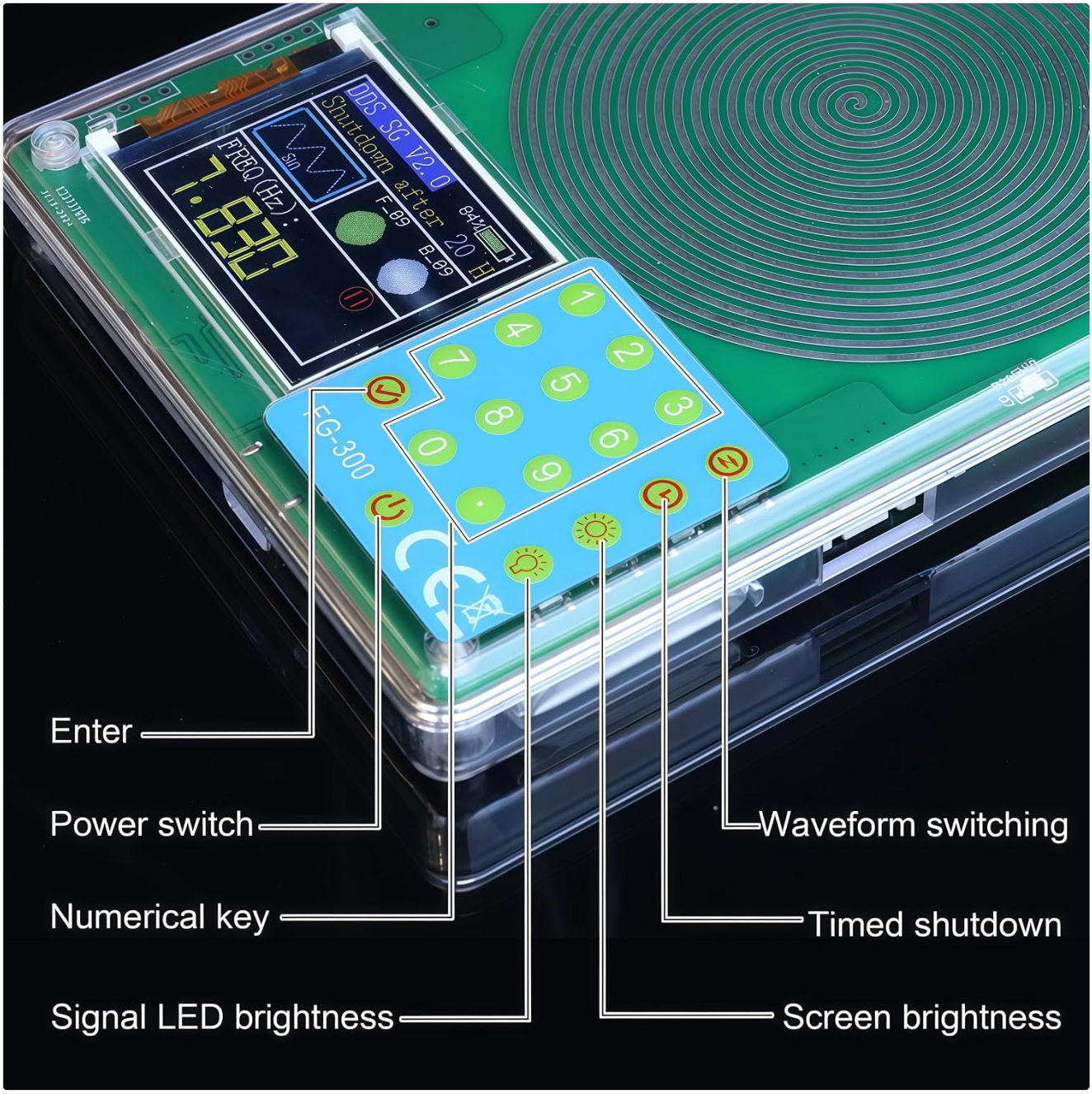


Image 4.5: Detailed view of the keypad and its functions, including numerical input, power, waveform selection, timed shutdown, and brightness controls.

Image 4.6: Comprehensive diagram detailing the LCD display elements and corresponding keypad functions for frequency input, waveform selection, and various settings.

5. Setup

5.1. Charging the Device

Before initial use, fully charge the FG-300. Connect the provided USB charging cable to the Type-C charging port on the back of the device and plug the other end into a standard USB power adapter (not included) or a computer USB port. The display will indicate charging status. A full charge typically takes a few hours.

5.2. Powering On/Off

- **To Power On:** Long press the power switch button (indicated by a power symbol on the keypad) for approximately 3 seconds. The LCD display will light up.

- **To Power Off:** Long press the power switch button for approximately 3 seconds. The display will turn off.

6. Operation

6.1. Setting Frequency

The FG-300 allows precise frequency adjustment from 0.0001Hz to 200KHz.

1. Ensure the device is powered on.
2. Use the numerical keys on the keypad to input the desired frequency. For example, to set 7.83Hz, press '7', '.', '8', '3'.
3. Press the 'Enter' key (indicated by a checkmark symbol) to confirm the frequency input. The display will update to show the new frequency.

6.2. Switching Waveforms

The device supports various waveform outputs. To change the waveform:

- Press the 'Waveform switching' button (indicated by a waveform symbol) on the keypad.
- Each press will cycle through available waveforms (e.g., Sine, Square, Triangle, Pulse). The current waveform type will be displayed on the LCD.

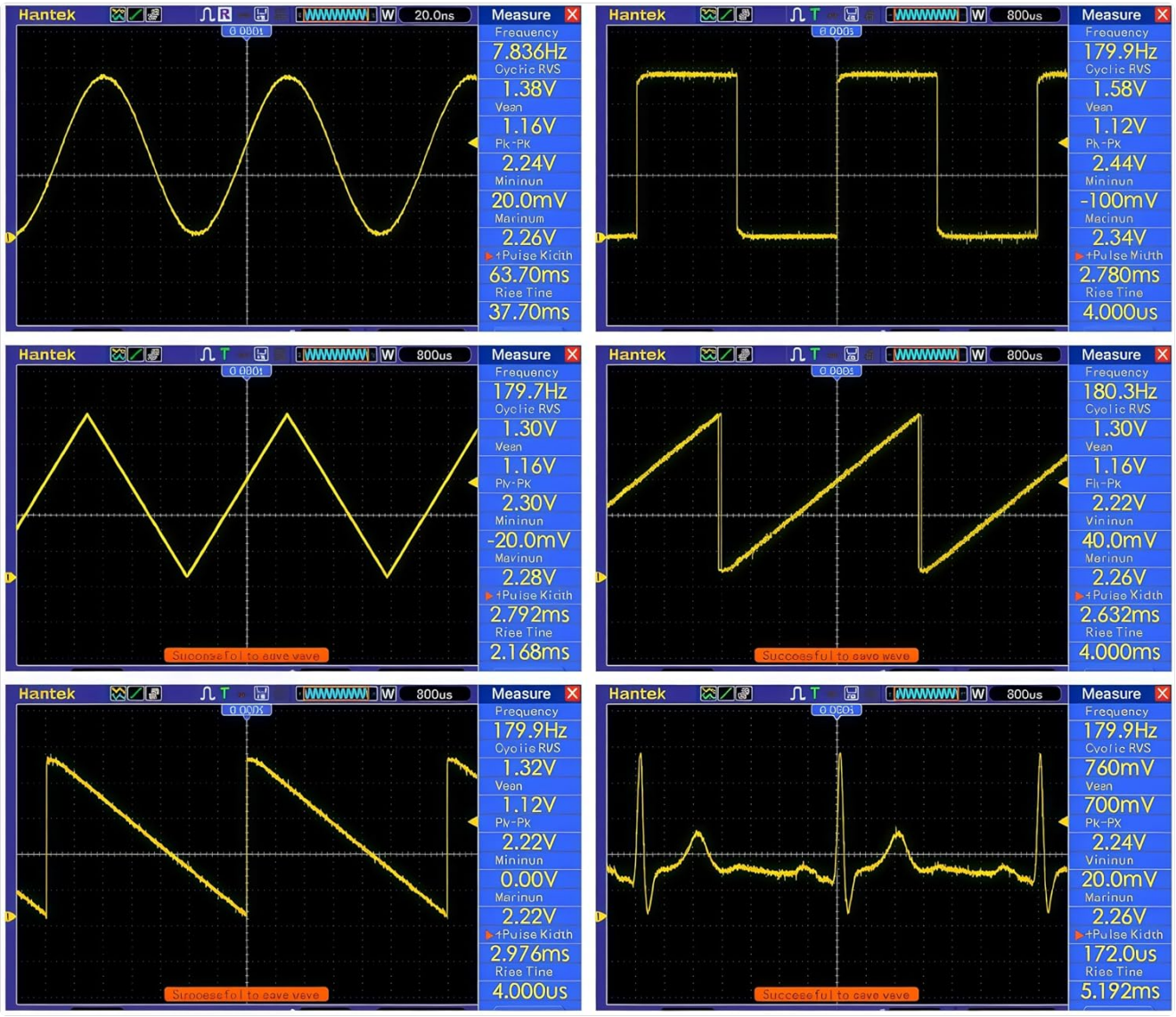


Image 6.1: Examples of different waveform outputs (sine, square, triangle, pulse) as displayed on an oscilloscope.

6.3. Adjusting Brightness

The FG-300 allows adjustment of both the screen backlight and the signal LED brightness.

- **Screen Backlight:** Press the 'Screen backlight adjustment' button (indicated by a sun symbol) to cycle through brightness levels.
- **Signal LED Brightness:** Press the 'Signal lamp brightness adjustment' button (indicated by a light bulb symbol) to adjust the intensity of the indicator LEDs.

6.4. Setting Timed Shutdown

To conserve battery or for specific applications, you can set a timed shutdown:

- Press the 'Timing shutdown' button (indicated by a clock symbol) on the keypad.
- Use the numerical keys to input the desired shutdown time in hours.
- Press 'Enter' to confirm. The display will show the remaining time until shutdown.

6.5. Automatic Settings Save

All setting parameters, including frequency, waveform, brightness, and timed shutdown, are automatically saved when the device is powered off. There is no need to manually save settings for the next startup.

6.6. Connecting External Devices

- **3.5mm Audio Output:** Connect headphones or an external speaker to the 3.5mm audio output jack for audible frequency output. Note that the device does not have a built-in volume control for this output; use headphones with integrated volume control if needed.
- **4-Pin Signal Output:** The device includes a 4-pin signal output interface for connecting to other electronic circuits or test equipment. A corresponding cable with loose wires is provided for custom connections. Refer to the specifications for output voltage details.

7. Maintenance

7.1. Cleaning

Wipe the device with a soft, dry cloth. Do not use abrasive cleaners or solvents, as they may damage the casing or display.

7.2. Battery Care

To prolong battery life, avoid fully discharging the device frequently. If storing for an extended period, charge the battery to approximately 50% and recharge every few months.

8. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on	Low or depleted battery	Charge the device using the provided USB cable.

Problem	Possible Cause	Solution
No sound from headphones	Headphones not properly connected; frequency too low to be audible; headphones faulty.	Ensure headphones are fully plugged in. Verify the frequency is within audible range (e.g., above 20Hz). Test with different headphones.
Display is dim or unreadable	Screen backlight brightness set too low.	Adjust the screen backlight brightness using the dedicated button.
Signal LEDs not blinking/illuminating	Signal LED brightness set too low; device in timed shutdown mode.	Adjust the signal LED brightness. Check if timed shutdown is active.
Incorrect frequency output	Incorrect frequency input.	Re-enter the desired frequency carefully and press 'Enter'.

9. Specifications

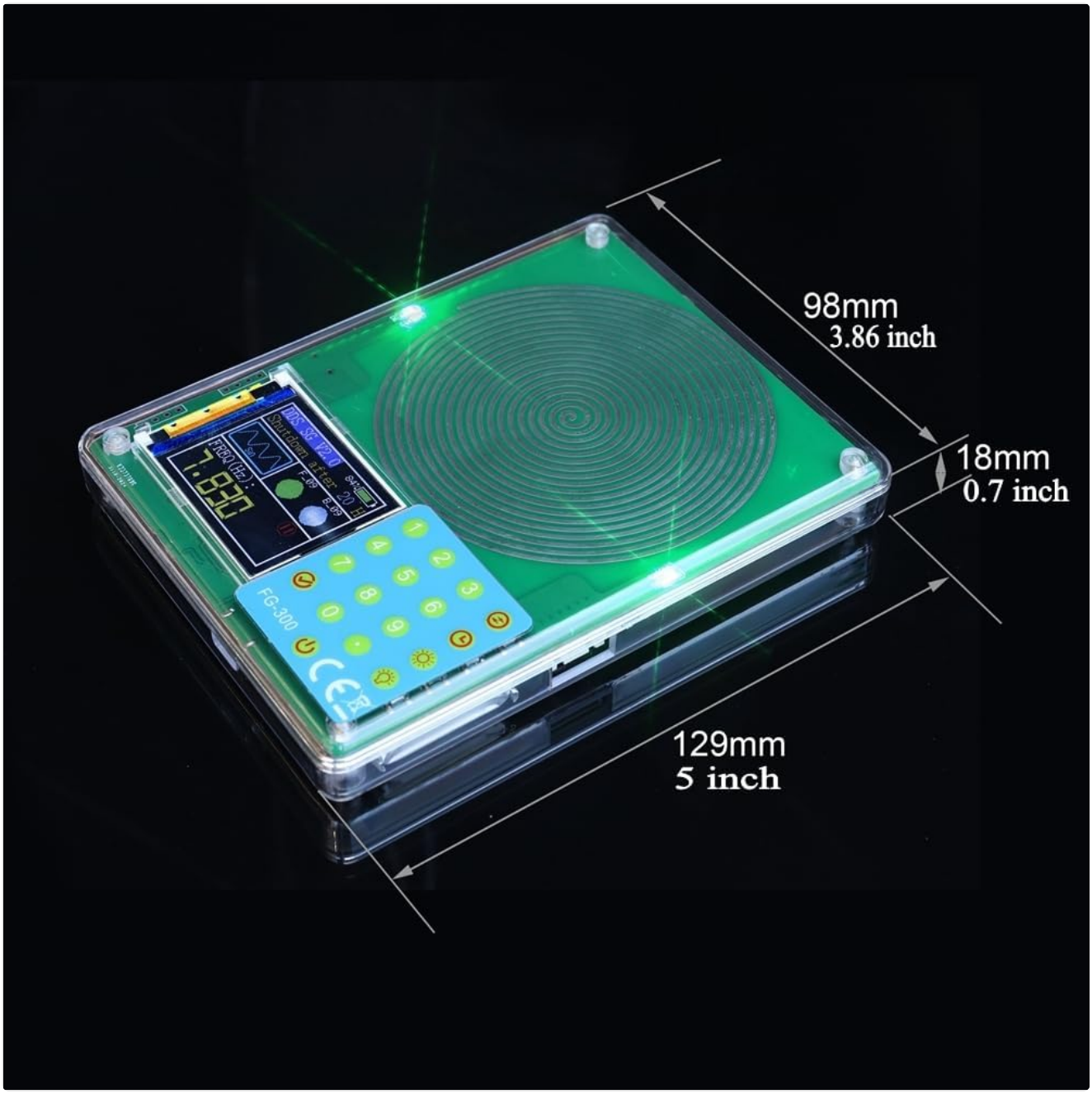


Image 9.1: Physical dimensions of the FG-300 device.

Feature	Detail
Model	FG-300
Brand	TKXEC
Frequency Range	0.0001Hz - 200KHz
Frequency Resolution	0.001Hz
Waveform Types	Sine, Square, Triangle, Pulse, and up to 13 other types
Schumann Wave Frequency	7.83Hz (approx. 8Hz)
Display	1.8-inch TFT Color LCD
Power Source	Built-in Rechargeable Lithium Ion Battery
Battery Capacity	1000mA (typical)
Charging Port	Type-C USB
Output Interfaces	3.5mm Audio Output, 4-pin Signal Output
Measurement Accuracy	0.01%
Material	Plastic
Item Weight	7.4 ounces (approx. 210g)
Dimensions (L x W x H)	129mm x 98mm x 18mm (5.0 x 3.86 x 0.7 inches)
Included Components	Generator, USB cable, Stylus, 4-pin output cable

10. Warranty and Support

For warranty information and technical support, please refer to the seller's policy on the platform where the product was purchased. Keep your purchase receipt as proof of purchase.
For further assistance, you may contact TKXEC customer support through the official channels provided by the retailer.

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.

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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.

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