# SPECTRUM

## 0. INTRODUCTION

SPECTRUM is a battery-powered electronic display designed to create visual stimuli that support the development of new firearm training exercises. It can interact with all Underdog gen2-3 devices via WiFi protocol and Mobile App.

The device is made of polymer, which means it cannot withstand strong impacts or gunfire.

The protection rating for SPECTRUM is IP62.

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## 1. GENERAL WARNINGS

- Carefully read the warnings in this document, as they provide essential guidance for the intended use of the "SPECTRUM" application, including technical specifications, installation, assembly, adjustment, and usage instructions.

- This instruction manual is an integral part of the "SPECTRUM" application and must be kept for future reference.

- After unpacking, ensure the device is intact. If in doubt, do not use it and contact the retailer or manufacturer.

- The WiFi module is designed exclusively for its intended purpose. Any other use is improper and potentially dangerous.

- Our products comply with current safety regulations. Therefore, always use appropriate precautions to prevent harm to people or property.

- Do not disassemble parts of the device. Tampering will void the product warranty.

- The manufacturer is not liable for unauthorized modifications to the device.

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## 2. POWERING ON AND CHARGING

To activate SPECTRUM, press the circular switch located on the right side of the device. If the device is functioning correctly, the yellow Underdog logo will appear on the display.

The battery level is indicated by the light strip on the back of the device. If it blinks, the battery is low.

To recharge SPECTRUM, connect the provided cable to the USB-C port above the power switch. The cable can be connected to any USB port, power bank, or smartphone adapter. Underdog advises against using low-quality or uncertified adapters. When connected to the charging cable, the light strip will illuminate and blink slightly, indicating that the device is charging.

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### 3. STAND-ALONE MODE

To use SPECTRUM without a remote control or sensors, simply press the button on the left side of the device after turning it on. A flashing green triangle will appear on the display. Pressing the button again will change the mode:

- Green Triangle: SYMBOLS Mode (Triangle, Square, and X in Red, Green, and Blue);

- Red Number 3: NUMBERS Mode (0–9 in Red, Green, and Blue);

- Yellow Letter B: LETTERS Mode (A, B, and C in Red, Green, and Blue);

- Blue Screen: COLORS Mode (Full Screen in Red, Green, and Blue);

- White Letter M: MIX Mode (Random numbers, letters, or symbols);

- Double-Arrow: DIRECTION Mode (Up, Down, Left, or Right).

Wait 3 seconds until a green square appears in the bottom left corner. Pressing the button again selects the activation mode:

- Green Square: SLOW RANDOM;

- Red Square and Rectangles: FAST RANDOM;

- PU: PUSH Mode (activates on touch);

- B: BLINK Mode (display stays white during pauses);

- Circular Arrows: SYNC Mode (awaits activation with another SPECTRUM device).

When both devices show three white squares, press and hold the buttons to start synchronized operation.
After another 3 seconds, the selected mode and activation will display, and the playback will begin.

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### 4. ACTIVATING/DEACTIVATING AUDIO SIGNAL

To toggle the audio signal while a symbol is displayed, hold the button during the desired mode until you hear a double "beep." This setting will remain in memory even after the device is turned off.

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### 5. DISPLAY ROTATION

To rotate the displayed symbol by 90°, press the button while the Underdog logo loads during startup. A yellow arrow indicating the new display orientation will appear. This setting will remain in memory even after the device is turned off.

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### 6. REMOTE MODE

To control SPECTRUM remotely (SPEC-REM or UNDERDOG Sensors), follow these steps:

1. Turn on SPEC-REM or the Sensor (both cannot be used simultaneously).

2. Turn on SPECTRUM.

3. Wait at least 3 seconds, then press and hold the SPECTRUM button until a green R (or concentric squares for the sensor) appears.

Once connected, SPECTRUM will display the assigned ID number (not applicable for sensors). From this point, the device will respond to the remote control.

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## 7. SPEC-REM

When SPEC-REM is turned on, "WAIT LINK" will appear. Press and hold the button on one or more SPECTRUM devices to connect them. After completing the procedure, press the RED button to access mode selection.

Clicking the YELLOW button selects the desired working mode, while pressing the RED button will toggle symbols on and off on SPECTRUM.

Holding the YELLOW button allows you to connect additional devices or adjust the brightness of the symbols on SPECTRUM.

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## 8. FIRMWARE UPDATE

All Underdog gen2 devices can be updated remotely via WiFi.

After downloading the firmware file from the website, access the "Tech Area" with the password "utac" and follow these steps:

1. Turn on the device while holding the button.

2. Wait for the "update" mode feedback (a white X on SPECTRUM or "FW update" on REM-SPEC) and release the button.

3. Connect your PC to the device's network (Underdog_FW_Update).

4. Open a web browser and enter the IP address: 192.168.4.1.

5. Log in with the following credentials: User: admin, Password: utac.

6. Select the .bin file from the previously downloaded folder.

7. Click "UPDATE."

The device will reset after the transfer.

WARNINGS:

- DO NOT interrupt the upload process.

- DO NOT turn off the device during the update.

- DO NOT update multiple devices simultaneously.

- Ensure you load the correct firmware.

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