Flipper

Flipper Zero User Manual

Brand: Generic | Model: Flipper

Introduction

The Flipper Zero is a powerful and versatile portable multitool designed for cybersecurity, ethical hacking, penetration testing, IoT security, and electronics prototyping. Its compact design and comprehensive features make it an invaluable device for professionals and enthusiasts alike.
Key features include:

- Sub-GHz radio transceiver for reading and transmitting signals.
- NFC reader and writer for cloning and emulating RFID/NFC cards and tags.
- Infrared transceiver for controlling devices like TVs and air conditioners.
- GPIO pins for connecting to external hardware and prototyping.
- Color display and backlit keyboard for intuitive navigation.
- Rechargeable battery for extended use.

Figure 1: The Flipper Zero device, showcasing its compact design and display.

Setup

1. Initial Charging

Before first use, fully charge your Flipper Zero. Connect the device to a power source using a standard USB Type-C cable. The display will indicate charging status.

2. Powering On/Off

To power on, press and hold the Back button (usually the bottom button on the directional pad) until the display illuminates. To power off, navigate to the system menu and select "Power Off" or hold the Back button until the device shuts down.

3. MicroSD Card Installation

A MicroSD card (not included) is recommended for storing data, firmware, and custom applications. Locate the MicroSD card slot on the side of the Flipper Zero and insert the card gently until it clicks into place. Ensure the card is formatted correctly (FAT32 or exFAT).

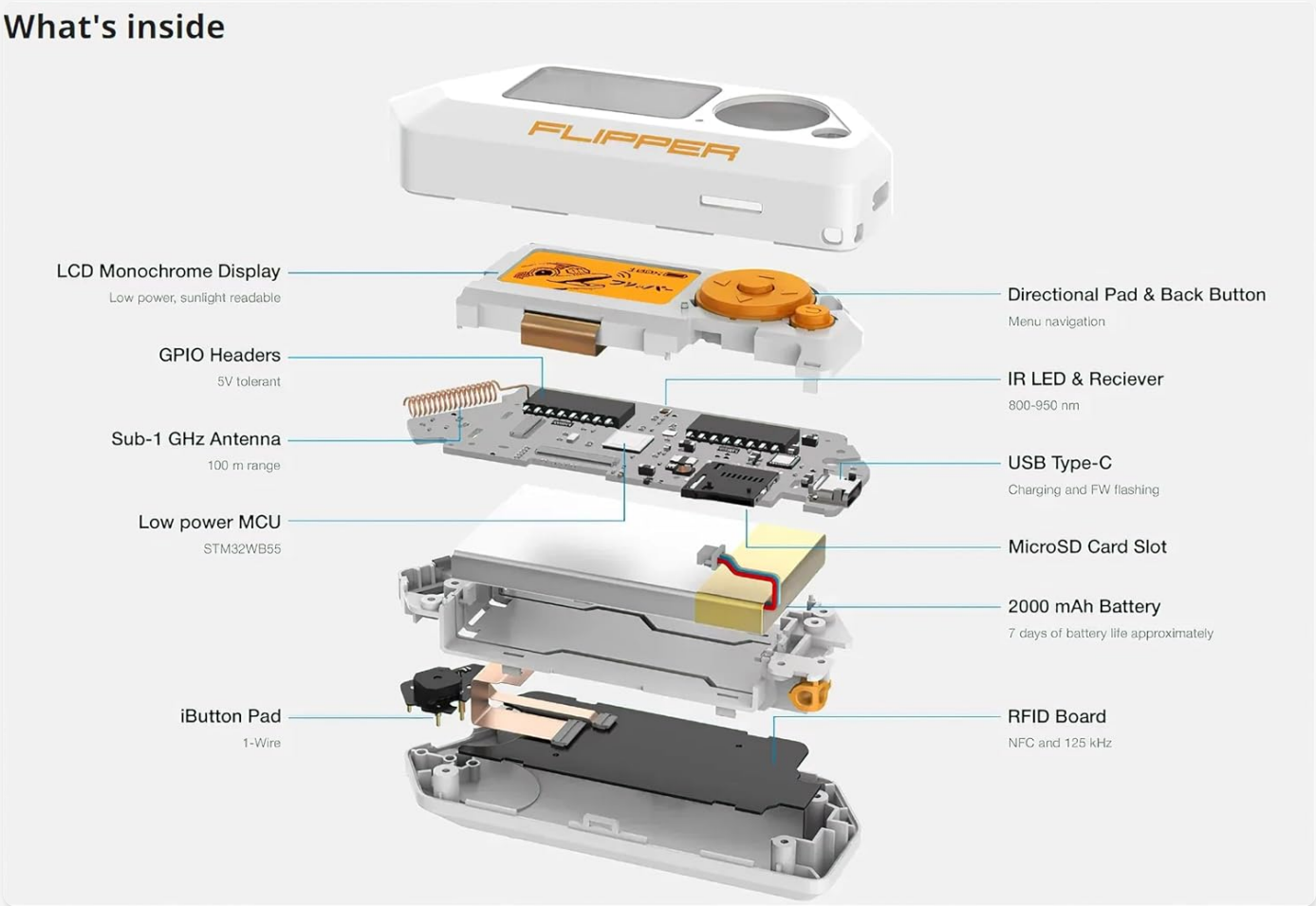

Figure 2: Exploded view of the Flipper Zero, highlighting internal components including the MicroSD card slot and USB Type-C port.

Operating Instructions

1. Navigation

Use the directional pad to navigate through menus and options on the Flipper Zero's display. The center button typically acts as "Select" or "Enter," and the bottom button acts as "Back" or "Cancel."

2. Sub-GHz Radio

The Sub-GHz radio allows for interaction with various wireless devices operating in the 300-928 MHz range. This includes garage door openers, remote controls, and some IoT devices.

- **Reading Signals:** Navigate to the Sub-GHz menu, select "Read," and position the Flipper Zero near the transmitting device.
- **Transmitting Signals:** After capturing a signal, you can save and then transmit it from the saved list.

3. NFC and RFID

The Flipper Zero can read, write, clone, and emulate various NFC and RFID tags and cards (125 kHz and 13.56 MHz).

- **Reading Cards:** Select the appropriate NFC or RFID menu, choose "Read," and place the card against the back of the Flipper Zero.
- **Emulating Cards:** Once a card is read and saved, you can select it for emulation, allowing the Flipper Zero to act as the original card.

Figure 3: The Flipper Zero actively reading an RFID card, displaying the tag ID.

Figure 4: The Flipper Zero simulating an RFID card, interacting with a card reader.

Figure 5: A transparent view of the Flipper Zero showing the internal NFC antenna, interacting with a card.

4. Infrared (IR)

The IR transceiver allows the Flipper Zero to learn and transmit infrared signals, enabling control of IR-controlled devices such as TVs, air conditioners, and media players.

- **Learning Remotes:** Select the IR menu, choose "Learn New Remote," and point your original remote at the Flipper Zero's IR port while pressing buttons.
- **Controlling Devices:** Once learned, you can transmit the saved IR signals to control your devices.

Figure 6: The Flipper Zero in the process of learning signals from a television remote control.

5. GPIO Pins

The General Purpose Input/Output (GPIO) pins allow the Flipper Zero to interface with external hardware, microcontrollers, and electronic circuits for prototyping and development.

- Refer to the Flipper Zero documentation for detailed pinout diagrams and usage examples.
- Ensure proper voltage levels (5V tolerant) when connecting external components to avoid damage.

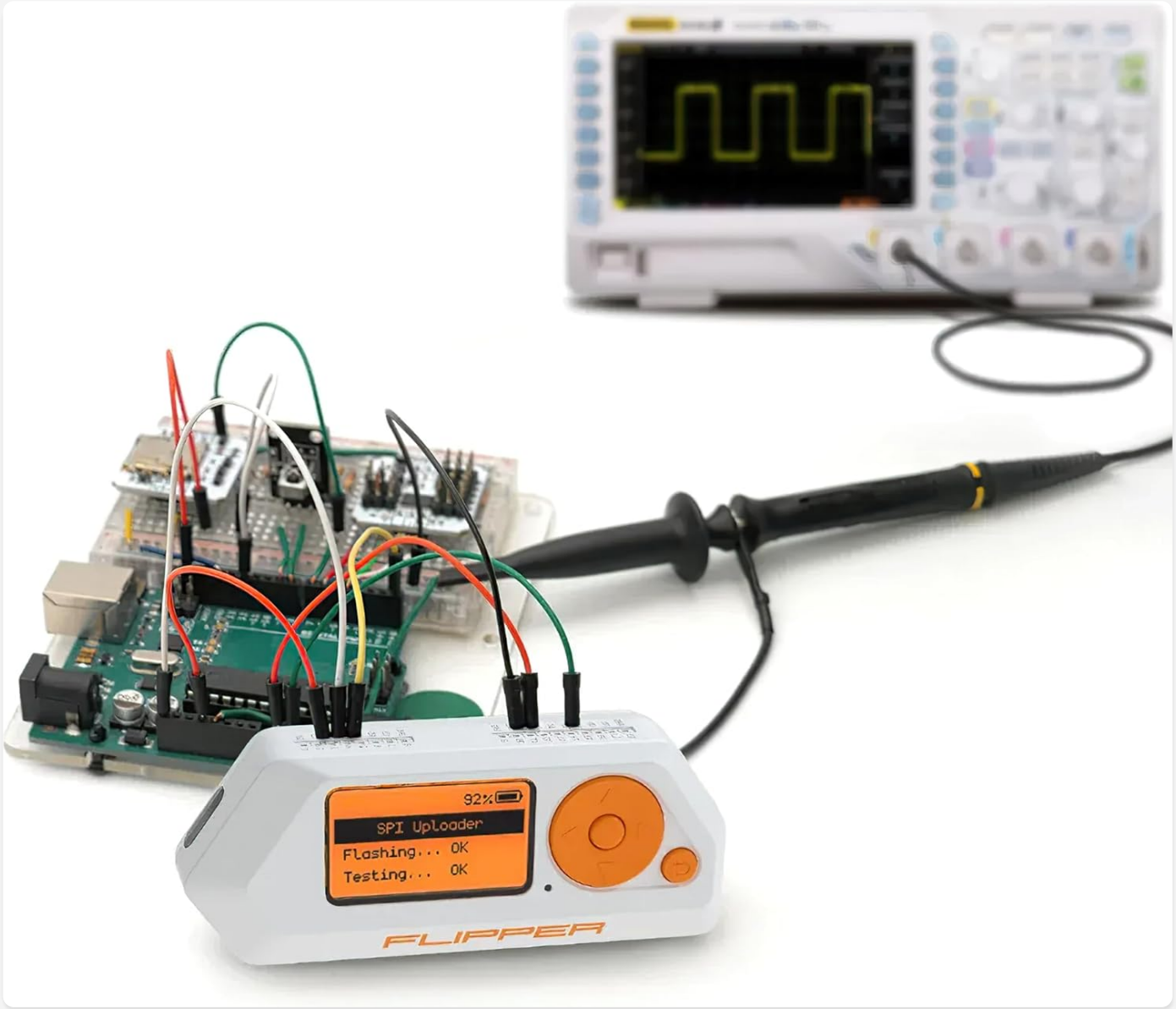

Figure 7: The Flipper Zero connected via its GPIO pins to a breadboard setup, with an oscilloscope monitoring signals.

6. iButton

The iButton interface allows the Flipper Zero to read and emulate iButton keys, commonly used for access control systems.

- **Reading iButton:** Touch the Flipper Zero's iButton pad to the iButton key.
- **Emulating iButton:** Select a saved iButton key for emulation and touch the Flipper Zero to the iButton reader.

Figure 8: The Flipper Zero interacting with an iButton reader, demonstrating its iButton emulation capability.

7. Running Custom Software

The Flipper Zero supports custom firmware and applications. These can be installed via the official Flipper Zero desktop application or by manually placing files on the MicroSD card. Always ensure software is from trusted sources.

Maintenance

1. Charging

Recharge the Flipper Zero when the battery indicator is low. Use a compatible USB Type-C cable and a standard 5V USB power adapter. Avoid using fast chargers that may exceed the device's input specifications.

2. Cleaning

Wipe the device with a soft, dry, lint-free cloth. Do not use abrasive cleaners, solvents, or aerosol sprays. Avoid exposing the device to excessive moisture.

3. Storage

Store the Flipper Zero in a cool, dry place away from direct sunlight and extreme temperatures. If storing for extended periods, ensure the battery is partially charged (around 50%) to prolong its lifespan.

Troubleshooting

Device Not Powering On

- Ensure the device is fully charged. Connect it to a power source for at least 30 minutes.

- Try a different USB Type-C cable and power adapter.
- Perform a hard reset by holding the power button (Back button) for an extended period (e.g., 15-20 seconds).

Features Not Working Correctly

- Ensure the device's firmware is up to date. Connect to the official Flipper Zero desktop application to check for updates.
- Verify that the MicroSD card is properly inserted and not corrupted.
- For specific feature issues (e.g., IR learning), ensure proper alignment and proximity to the target device.

Specifications

Feature	Detail
Brand	Generic
Model Number	Flipper
Power Source	Battery Powered
Dimensions (L x W x H)	6 x 4 x 3 inches
Item Weight	10.4 ounces
Connectivity Technology	Wireless
Compatible Devices	Smartphone, Personal Computer, Tablet, TV, Air Conditioner, RFID Cards, NFC Devices, Electronic Devices with GPIO Pins
Maximum Range	1 Kilometers (Sub-GHz)
Included Components	Flipper Zero device

Warranty and Support

This product is manufactured by Flipper. For specific warranty information, please refer to the documentation provided with your purchase or contact the manufacturer directly. General support and community resources can often be found on the official Flipper Zero website or forums.
Please note that unauthorized modifications or use of the device outside its intended purpose may void any applicable warranty.

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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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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