

[Manuals.plus](#) /

› [FREENOVE](#) /

› Freenove Control Board V4 Rev3 Instruction Manual

FREENOVE FNK0067

Freenove Control Board V4 Rev3 Instruction Manual

Model: FNK0067

1. INTRODUCTION

This manual provides comprehensive instructions for the Freenove Control Board V4 Rev3. It covers product overview, technical specifications, setup procedures, operational guidelines, and troubleshooting tips. This board is designed to be highly compatible with the Arduino IDE, making it an excellent choice for electronics and coding enthusiasts, from beginners to experienced users.

2. PRODUCT OVERVIEW

The Freenove Control Board V4 Rev3 is an advanced development board featuring a USB Type-C interface, an upgraded USB-Serial chip, and a black PCB board. It maintains full compatibility with the previous blue Rev3 board, ensuring seamless integration with existing code, libraries, mounting holes, and extensions.

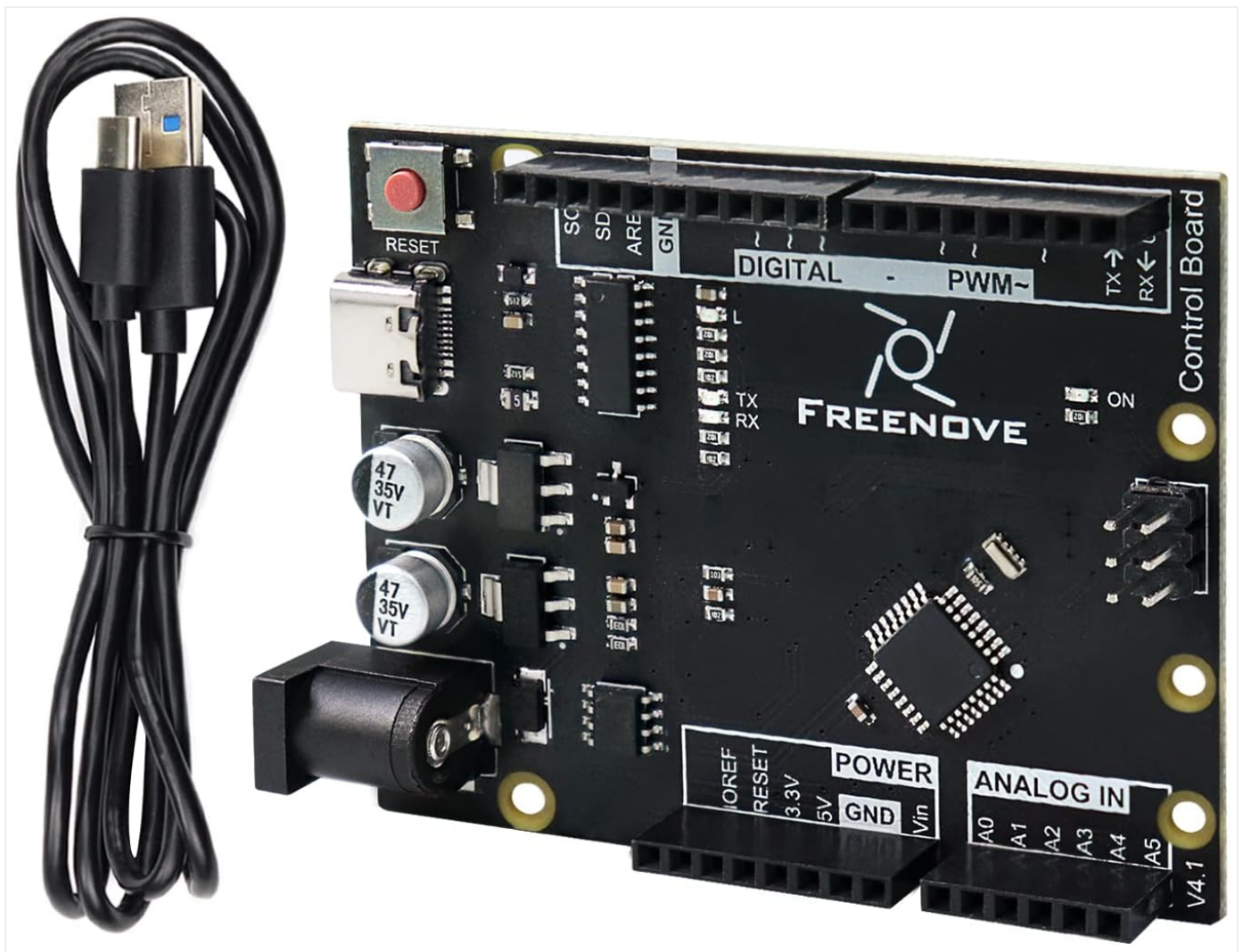


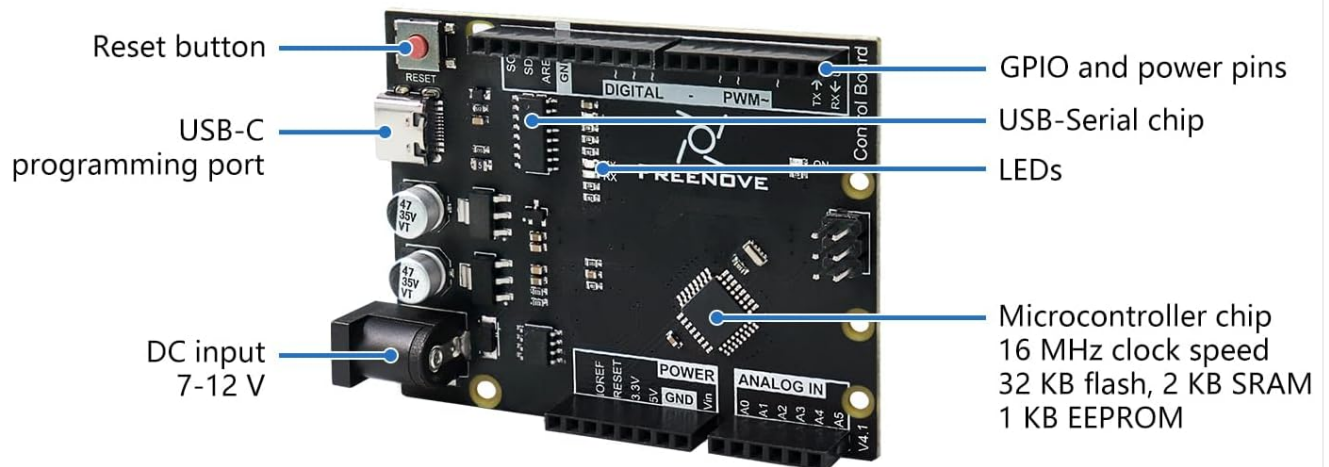
Figure 2.1: Freenove Control Board V4 Rev3 and included USB Type-C cable.

Key features include:

- **New Version:** Upgraded to USB Type-C interface, USB-Serial chip, and black PCB board.
- **Compatibility:** Fully compatible with the old blue Rev3 board including code, libraries, mounting holes, and extensions.
- **Detailed Tutorial:** Provides step-by-step guide and example projects with code and explanations (additional items may be required).
- **Easy to Use:** Simply connect the board to your computer (with Arduino IDE and driver installed) using the USB cable for programming.
- **Technical Support:** Free technical support is available for any questions or problems.

Control Board V4 (Rev3)

An easy-to-use and highly compatible control board.



Pins	Digital I/O pins	14
	Analog input pins (ADC)	6, up to 10-bit
	PWM pins	6
Communication	UART	1
	I2C	1
	SPI	1
Power	Circuit operating voltage	5 V
	DC current per I/O pin	20 mA
	DC current for 3.3V pin	50 mA
Compatible with Arduino IDE		

Figure 2.2: Labeled components and pinouts of the Freenove Control Board V4 Rev3.

Your browser does not support the video tag.

Video 2.1: An overview of the Freenove Control Board V4, showcasing its features and capabilities.

3. TECHNICAL SPECIFICATIONS

The Freenove Control Board V4 Rev3 features the following technical specifications:

Category	Specification
Digital I/O Pins	14
Analog Input Pins (ADC)	6, up to 10-bit
PWM Pins	6
UART	1

Category	Specification
I2C	1
SPI	1
Circuit Operating Voltage	5 V
Input Voltage (VIN)	7-12 V
DC Current per I/O Pin	20 mA
DC Current for 3.3V Pin	50 mA
Main Core Clock Speed	16 MHz
Flash Memory	32 KB (0.5 KB used by bootloader)
SRAM	2 KB
EEPROM	1 KB
Width	69 mm
Length	54 mm

4. PACKAGE CONTENTS

The Freenove Control Board V4 Rev3 package includes the following items:

- 1 x Freenove Control Board V4
- 1 x USB A to C cable

Package



Figure 4.1: Contents of the Freenove Control Board V4 Rev3 package and product dimensions.

5. SETUP

To begin using your Freenove Control Board V4 Rev3, follow these simple steps:

1. **Install Arduino IDE:** If you haven't already, download and install the Arduino IDE (Integrated Development Environment) from the official Arduino website (www.arduino.cc/en/software).
2. **Install Drivers:** Ensure that the necessary USB-Serial drivers are installed on your computer. These are typically included with the Arduino IDE installation or can be found on the Freenove website.
3. **Connect the Board:** Use the provided USB A to C cable to connect the Freenove Control Board V4 Rev3 to an available USB port on your computer.
4. **Select Board and Port:** Open the Arduino IDE. Go to **Tools > Board** and select "Arduino Uno" (as the Freenove Control Board V4 Rev3 is fully compatible). Then, go to **Tools > Port** and select the serial port corresponding to your connected board.

Easy to Use

Just connect it to your computer (installed IDE and driver) to program it.

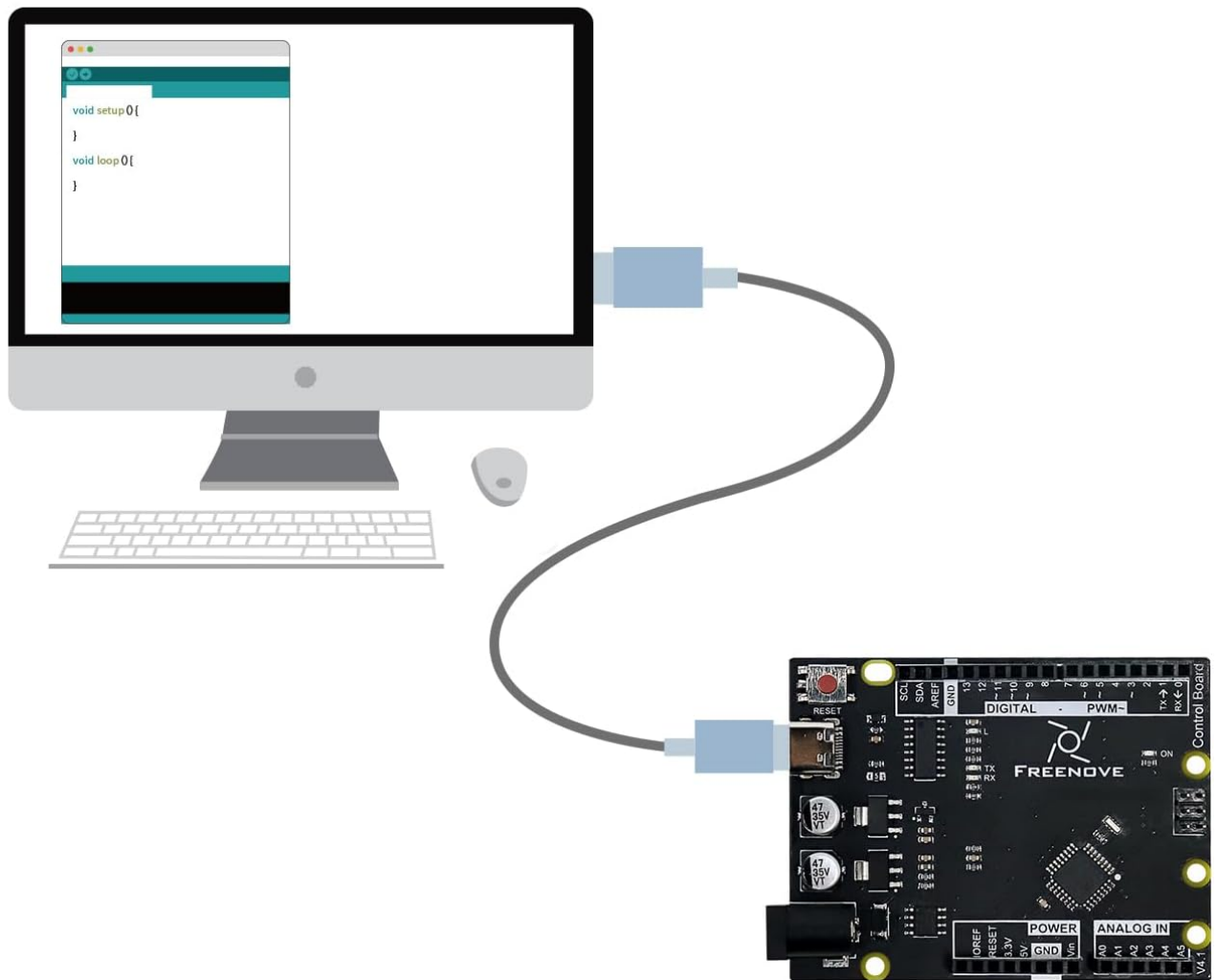


Figure 5.1: Connecting the Freenove Control Board to a computer for programming.

6. OPERATION

Once the board is set up, you can begin programming and interacting with it.

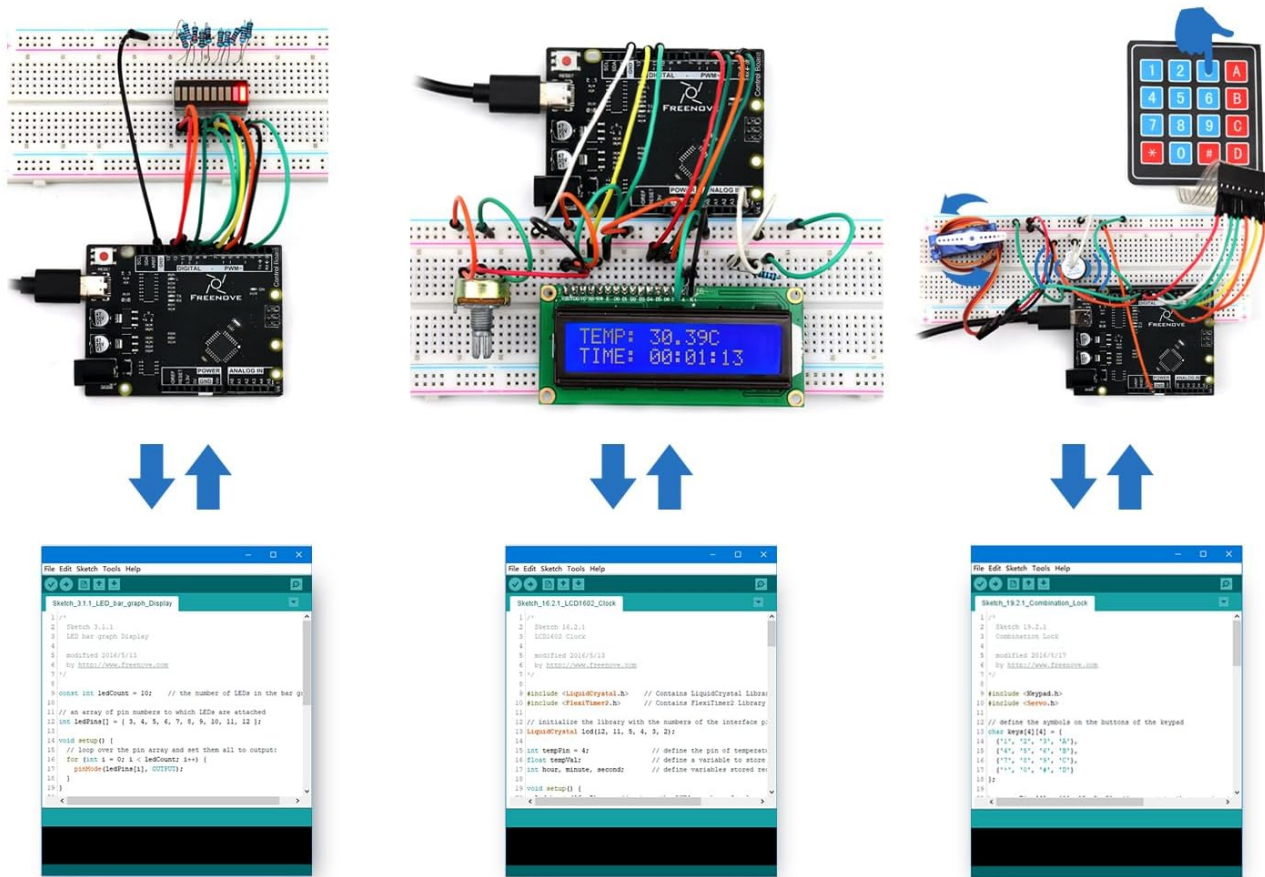
- **Writing Code:** Use the Arduino IDE to write your programs (sketches) in the Arduino programming language (based on C/C++).
- **Compiling and Uploading:** Click the "Verify" button (checkmark icon) to compile your code and check for errors. Then, click the "Upload" button (right arrow icon) to upload the compiled code to your Freenove Control Board.
- **Interacting with Components:** Connect various electronic components (LEDs, sensors, motors, etc.) to the board's digital I/O and analog input pins as per your project requirements. Refer to the detailed tutorials for wiring diagrams and example code.

7. PROJECT EXAMPLES

The Freenove Control Board V4 Rev3 is ideal for a wide range of projects, from basic blinking LEDs to more complex systems involving multiple sensors and actuators. The provided tutorials include dozens of projects that demonstrate the board's capabilities.

Project Examples

Provides dozens of projects from simple to complex (need extra items).



Extra items are required to complete the projects provided.

Figure 7.1: Various project examples demonstrating the versatility of the Freenove Control Board. Note: Extra items are required to complete these projects.

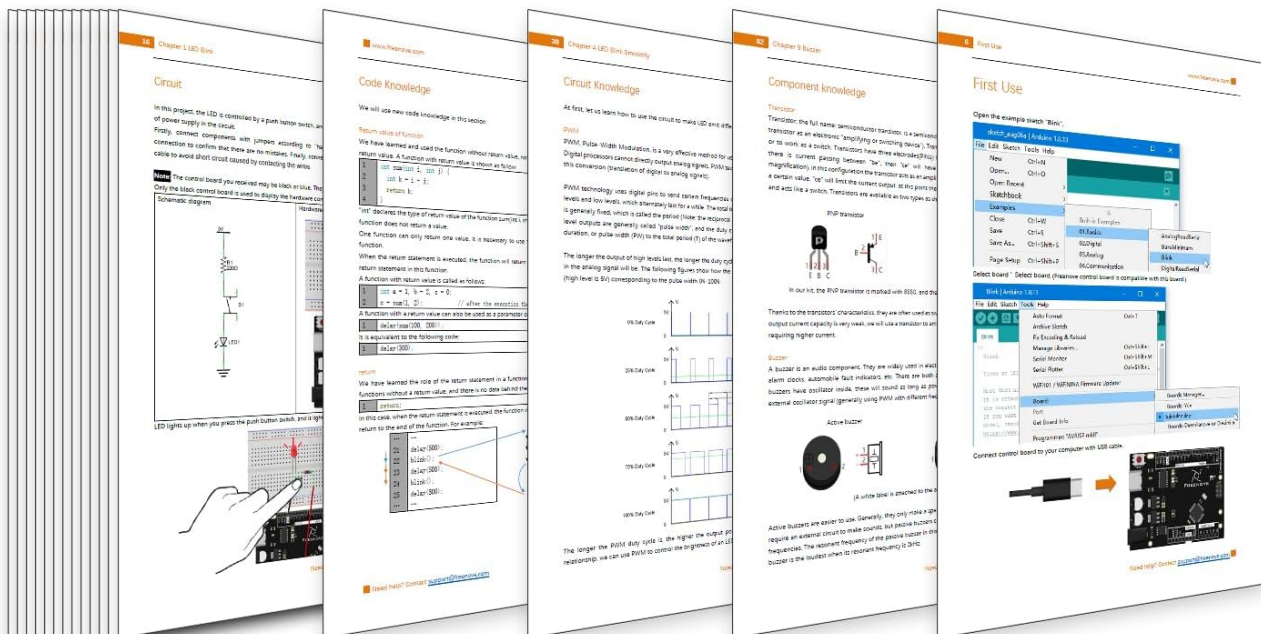
8. TUTORIAL AND CODE

A comprehensive tutorial and complete code examples are provided to guide you through the learning process. This includes basic electronics and programming knowledge, along with detailed instructions for various projects.

- **Accessing the Tutorial:** The download link for the tutorial and code can be found on the product box. Alternatively, you can often find it on the Freenove website or their official GitHub repository. A common link for Freenove tutorials is <http://freenove.com/fsk0067> (based on review information).
- **Content:** The tutorial typically includes step-by-step guides, circuit diagrams, and explanations of the code. Please note that no paper tutorial is included with the product.

Tutorial Examples

Provides step-by-step guide and detailed explanations.



The download link can be found on the box! (No paper tutorial.)

Figure 8.1: Examples of detailed tutorial pages provided by Freenove.



Figure 8.2: The product box indicating where to find the tutorial download link.

9. TROUBLESHOOTING

If you encounter issues while using your Freenove Control Board V4 Rev3, consider the following common troubleshooting steps:

- **Driver Installation:** Ensure that the correct USB-Serial drivers (e.g., CH340C) are properly installed. Check your computer's Device Manager for any unrecognized devices.
- **Port Selection:** Verify that the correct serial port is selected in the Arduino IDE (Tools > Port).
- **Board Selection:** Confirm that "Arduino Uno" is selected under Tools > Board.
- **USB Cable:** Try using a different USB cable to rule out a faulty connection.
- **Power Supply:** Ensure the board is receiving adequate power. While USB provides power, some projects may require external power via the DC input (7-12V).
- **Code Errors:** Check the Arduino IDE's console for any compilation or upload errors. Review your code for syntax mistakes.
- **Wiring:** Double-check all circuit connections on your breadboard or shield. Loose or incorrect wiring is a common cause of issues.

- **Reset Button:** Press the reset button on the board to restart the microcontroller.

For more detailed troubleshooting or persistent issues, please refer to the official Freenove tutorials or contact technical support.

10. SUPPORT AND WARRANTY

Freenove provides free technical support to assist you with any questions or problems you may encounter with your control board.

- **Contact Support:** The contact information for technical support, including email, can typically be found on the product packaging or the Freenove website (www.freenove.com/contact).
- **Online Resources:** Utilize the detailed online tutorials and community forums for additional help and resources.



Figure 10.1: Back of the product box showing contact details for Freenove support.

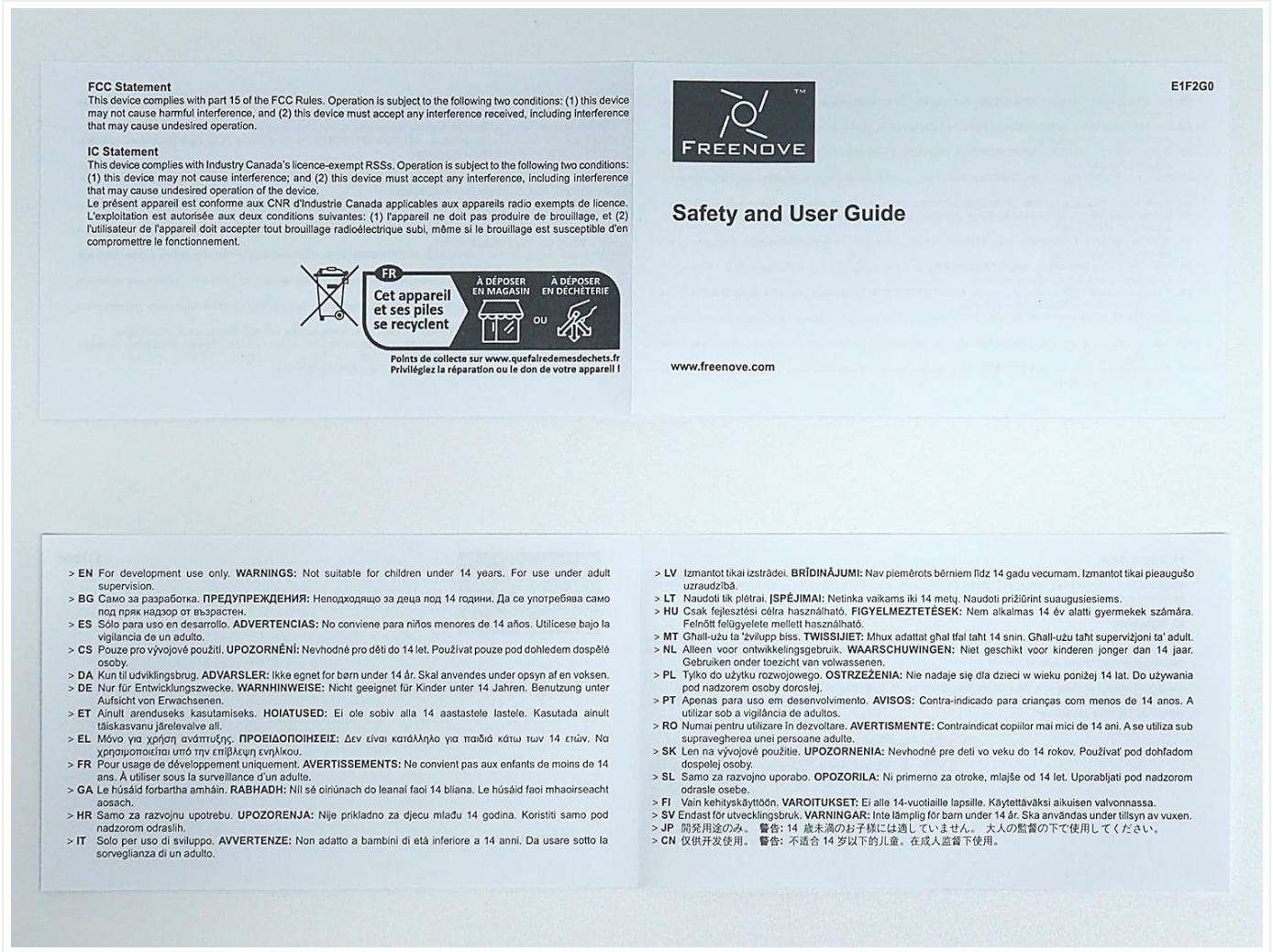


Figure 10.2: Safety and User Guide included with the product.

For warranty information, please refer to the terms and conditions provided at the time of purchase or contact Freenove directly.

© 2024 Freenove. All rights reserved.

For the latest information and updates, please visit the official [FREENOVE Store on Amazon](#).

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.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

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

Open the live page

<https://manuals.plus/asin/B0BVYCJY6D>

More documents and user manuals: <https://manuals.plus/>