KeeYees KYES6-03-3-KIT

KeeYees Microcontroller Development Board (Model KYES6-03-3-KIT) User Manual

Comprehensive guide for setup, operation, and troubleshooting.

Introduction

This manual provides essential instructions for the KeeYees Microcontroller Development Board set, model KYES6-03-3-KIT. This set includes three development boards, three USB cables, three straight pin headers, and three sets of 40-pin jumper wires (male-to-female, male-to-male, and female-to-female). Designed for compatibility with the Arduino IDE, these boards are suitable for various electronic projects, from educational purposes to industrial applications.

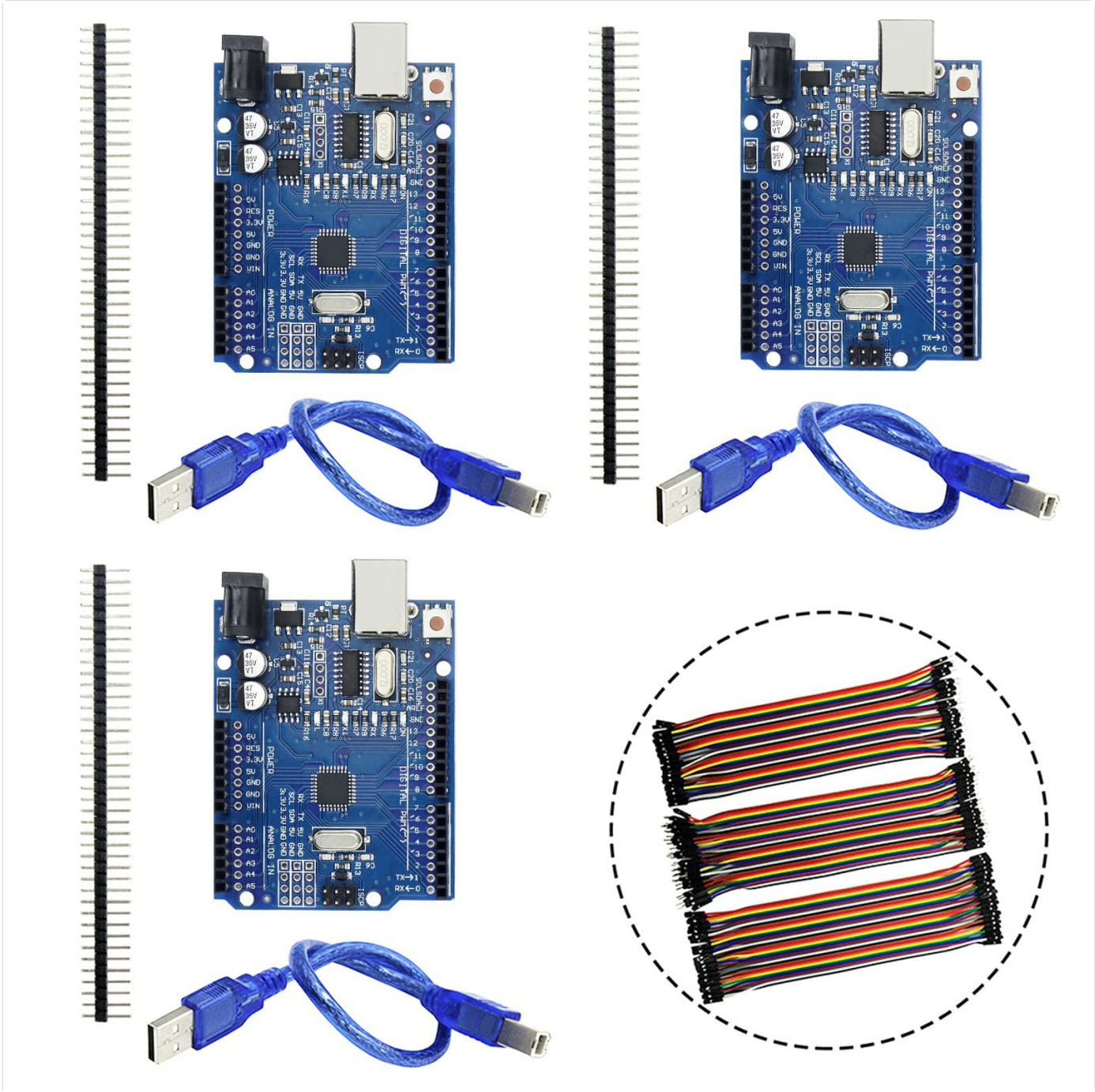

Image: Overview of the KeeYees Microcontroller Development Board set, showing three development boards, three blue USB cables, and three black straight pin headers.

Setup Instructions

1. Component Identification

Before beginning, familiarize yourself with the components included in your set:

- **Microcontroller Development Boards:** Three units, each featuring an ATmega328P microcontroller.
- **USB Cables:** Three blue USB A to B cables for connecting the boards to your computer.
- **Straight Pin Headers:** Three 2.54mm pitch, 40-pin headers for custom connections.
- **Jumper Wires:** Three sets of 40-pin, 20cm jumper wires (male-to-female, male-to-male, female-to-female) for prototyping.

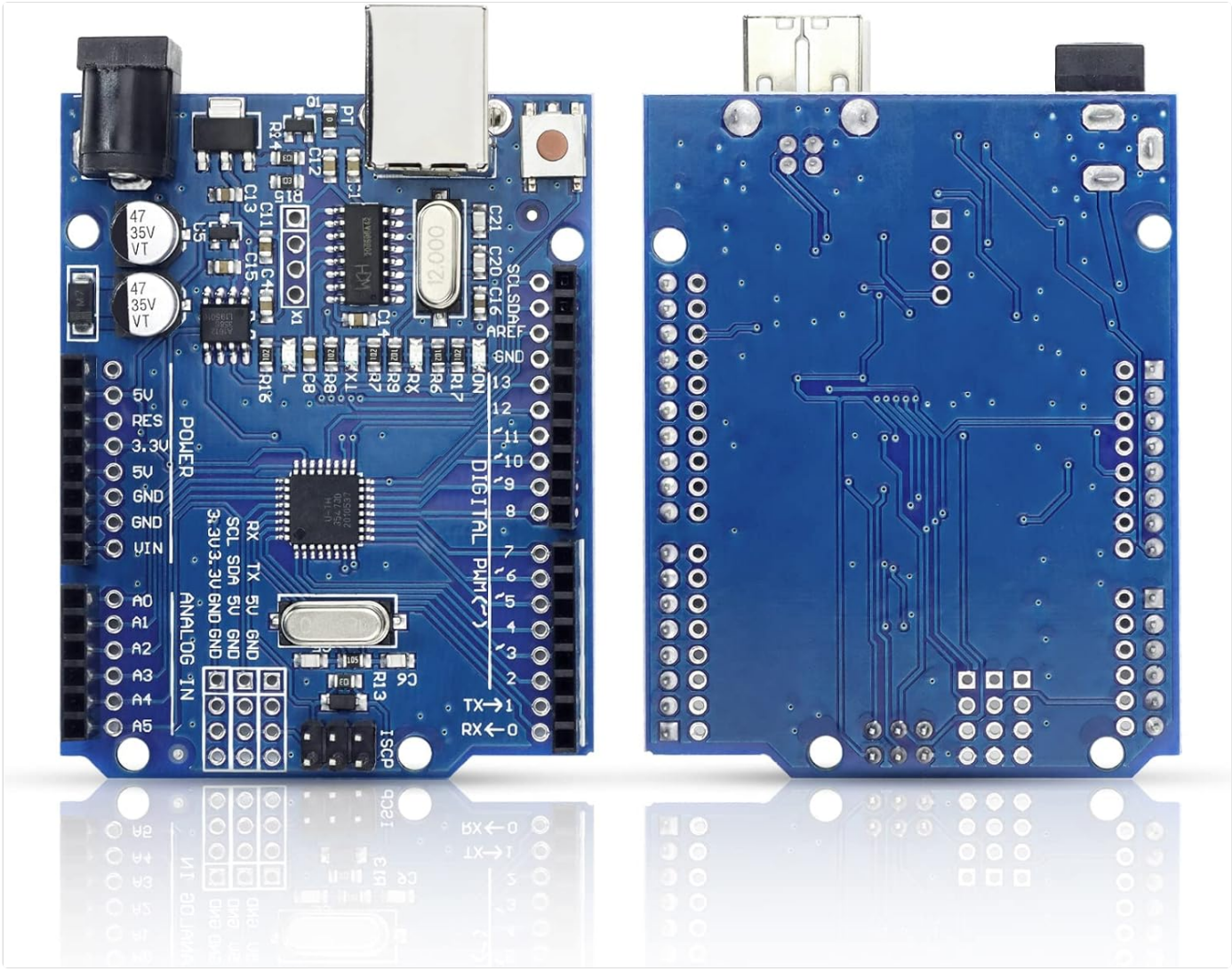

Image: Detailed front and back views of a single KeeYees Microcontroller Development Board, highlighting its components and pin layout.

2. Driver Installation (CH340)

The KeeYees Development Boards utilize a CH340 USB-to-serial chip. For your computer to recognize the board, the appropriate CH340 driver must be installed. This is a critical step, especially for Windows 7, 8, and 11 operating systems.

1. **Download the Driver:** Search online for "CH340 driver" and download the latest stable version from a reputable source (e.g., the manufacturer's website or a trusted electronics community forum).
2. **Install the Driver:** Follow the instructions provided with the driver package to install it on your operating system. For Windows, this typically involves running an executable file.
3. **Verify Installation:** After installation, connect a development board to your computer using one of the provided USB cables. Open your computer's Device Manager (Windows) or System Information (macOS/Linux) and look for a new COM port entry (e.g., "USB-SERIAL CH340"). If it appears without an error, the driver is successfully installed.

Note: *Some users have reported success with older versions of the CH340 driver (e.g., dated 2014 or version 3.7.2022.1) if the latest version causes issues, particularly on Windows 11.*

Image: Close-up view of the blue USB A and USB B connectors, illustrating the type of cable used to connect the development board to a computer.

3. Connecting to Arduino IDE

1. **Install Arduino IDE:** If you haven't already, download and install the Arduino Integrated Development Environment (IDE) from the official Arduino website (www.arduino.cc/en/software).
2. **Connect the Board:** Plug one end of the USB cable into the development board and the other end into an available USB port on your computer.
3. **Select Board:** Open the Arduino IDE. Go to **Tools > Board** and select "Arduino Uno" (or compatible board, as these are Uno clones).
4. **Select Port:** Go to **Tools > Port** and select the COM port corresponding to your connected board (e.g., COM3, COM4, etc., which should show "USB-SERIAL CH340" next to it).
5. **Test Connection:** Load a simple sketch, such as the "Blink" example (**File > Examples > 01.Basics > Blink**), and click the "Upload" button. If the upload is successful and the LED on the board blinks, your setup is complete.

Operating Instructions

Power Supply

The development board can be powered in several ways:

- **USB Connection:** The primary method is via the USB cable connected to your computer. This provides 5V.
- **External Power Jack:** An external power supply (DC adapter) can be connected to the barrel jack. The recommended input voltage is 7-12V, with limits between 6-20V.
- **VIN Pin:** Power can also be supplied directly to the VIN pin (7-12V recommended).

The board operates at 5V, but also provides a 3.3V output pin with a DC current limit of 50mA.

Input/Output (IO) Pins

The board features various pins for connecting sensors, actuators, and other electronic components:

- **Digital IO Pins:** 14 pins, 6 of which support Pulse Width Modulation (PWM) output. Each IO pin can supply or sink 40mA DC current.
- **Analog Input Pins:** 6 pins (A0-A5) for reading analog sensor data.
- **Power Pins:** 5V, 3.3V, GND (Ground), and VIN.
- **Communication Pins:** Dedicated pins for serial communication (RX, TX), I2C (SDA, SCL), and SPI.

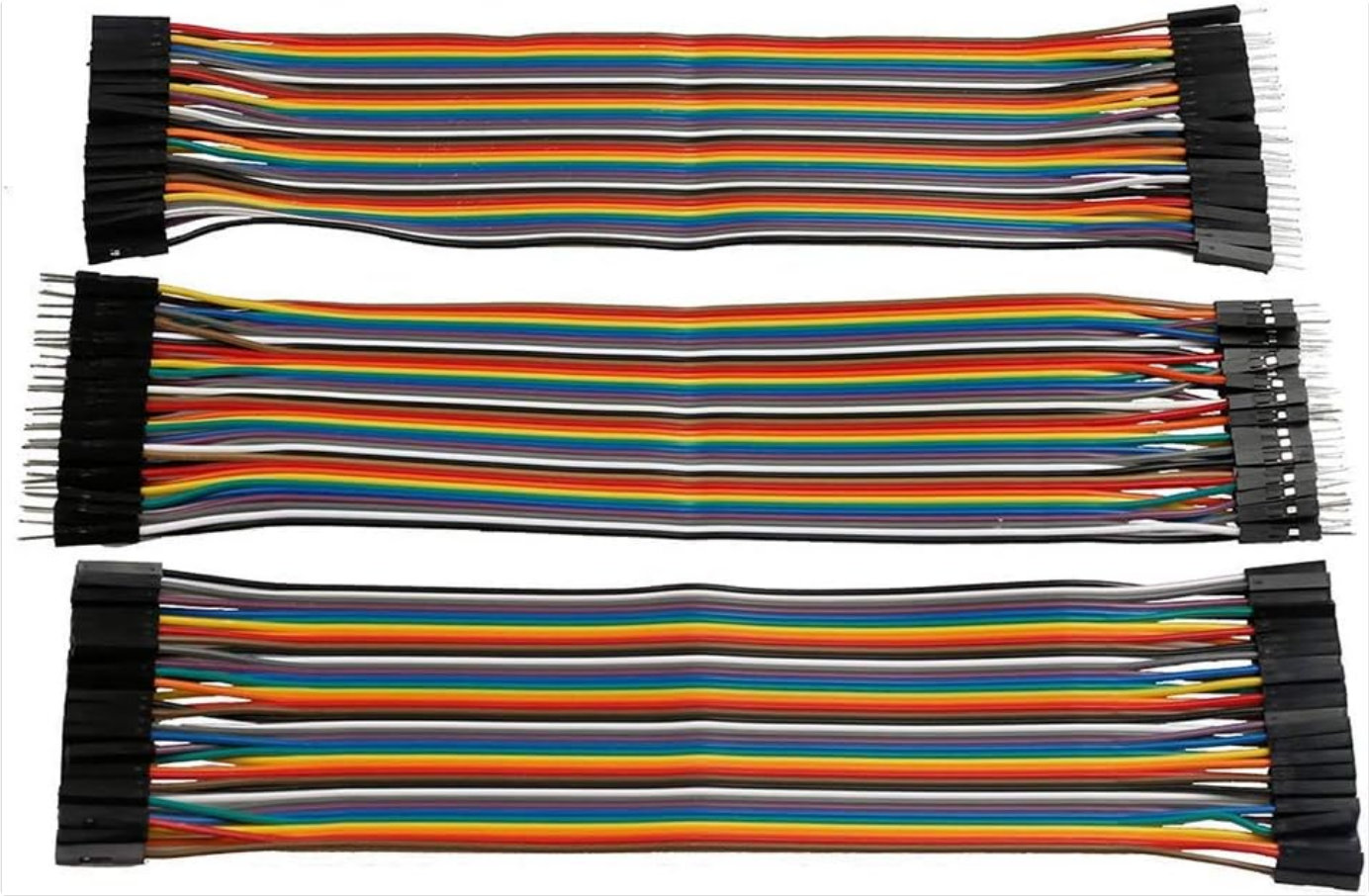

Image: A collection of 40-pin jumper wires, including male-to-female, male-to-male, and female-to-female types, essential for connecting components to the development board.

Use the included jumper wires to connect external components to the board's pins. Ensure correct polarity and voltage levels to prevent damage.

Maintenance

To ensure the longevity and proper functioning of your KeeYees Microcontroller Development Boards, follow these maintenance guidelines:

- **Storage:** Store the boards in a dry, anti-static environment, away from direct sunlight and extreme temperatures.
- **Cleaning:** If necessary, gently clean the board with a soft, dry brush or compressed air to remove dust. Avoid using liquids or abrasive cleaners.
- **Handling:** Handle the boards by their edges to minimize contact with components and prevent electrostatic discharge.
- **Power Off:** Always disconnect power before making or changing connections to the board.

Troubleshooting

This section addresses common issues you might encounter:

- **Board Not Recognized by Computer/Arduino IDE:**
  - **CH340 Driver:** This is the most frequent cause. Ensure the CH340 driver is correctly installed. Try reinstalling it, or if issues persist, experiment with older driver versions as mentioned in the Setup section.
  - **USB Cable:** Test with a different USB cable. Faulty cables can prevent proper communication.
  - **USB Port:** Try connecting to a different USB port on your computer.
  - **Arduino IDE Port Selection:** Verify that the correct COM port is selected under **Tools > Port** in the Arduino IDE.
- **Sketch Upload Fails:**
  - **Board Selection:** Confirm "Arduino Uno" is selected under **Tools > Board**.
  - **Port Selection:** Ensure the correct COM port is selected.
  - **Driver Issues:** An improperly installed or conflicting CH340 driver can lead to upload failures.
  - **Connections:** Disconnect any external components from the board's digital pins (especially pins 0 and 1, RX/TX) during upload, as they can interfere with serial communication.
- **Board Not Powering On:**
  - **USB Connection:** Check if the USB cable is securely connected to both the board and the computer.
  - **External Power:** If using an external power supply, ensure it provides the correct voltage (7-12V DC) and sufficient current.

Specifications

Key technical specifications for the KeeYees Microcontroller Development Board:

Feature	Specification
Microcontroller	ATmega328P
Operating Voltage	5V
Input Voltage (Recommended)	7-12V
Input Voltage (Limits)	6-20V
Digital I/O Pins	14 (6 provide PWM output)
Analog Input Pins	6
DC Current per I/O Pin	40mA
DC Current for 3.3V Pin	50mA
Flash Memory	32 KB (0.5 KB used by bootloader)
SRAM	2 KB
Clock Speed	16 MHz

Feature	Specification
Pin Headers Pitch	2.54mm
Jumper Wires Length	20cm
Compatible Operating Systems	Windows 7, Windows 8 (and generally Windows 10/11, macOS, Linux with CH340 driver)

Warranty Information

Specific warranty details for the KeeYees Microcontroller Development Board are not provided in the product information. Please refer to the retailer's return policy or contact KeeYees directly for warranty inquiries.

Customer Support

For technical assistance or further questions regarding your KeeYees Microcontroller Development Board, please visit the official KeeYees store on Amazon or contact their customer service through the platform where the product was purchased.
KeeYees Store: Visit KeeYees Store on Amazon