Douk Audio VFD253

Douk Audio VFD253 Audio Spectrum Analyzer User Manual

Model: VFD253

1. Introduction

The Douk Audio VFD253 is a versatile device integrating an audio spectrum analyzer, a Bluetooth 5.0 receiver, and a 3.5mm AUX selector. It features a high-resolution VFD display and offers multiple audio input options, including microphone pickup. This manual provides detailed instructions for setting up and operating your VFD253 to ensure optimal performance and enjoyment.

2. Product Features

- **VFD Audio Spectrum Analyzer:** Utilizes a dedicated green VFD display screen with 25 × 15 high resolution for accurate frequency band visualization.
- **Bluetooth Receiver & Audio Switcher:** Supports Bluetooth 5.0 and two 3.5mm AUX inputs, alongside microphone pickup. Compatible with phones, PCs, game players, amplifiers, and speakers.
- **High-Precision Clock:** Features an RX8025T built-in crystal oscillator for high clock accuracy (within ±3ppm year error).
- **Wide Frequency Range & AGC Display:** Supports an 80Hz-16KHz frequency range with high-precision display. The special AGC algorithm and customized output curve ensure ideal visual effects across varying input signal levels.
- **Adjustable Display Settings:** Allows adjustment of main light column falling speed, peak holding time, peak falling speed, brightness (5 levels + auto), and gain (5 levels).
- **Multiple Display Modes:** Offers 5 music spectrum display modes and 2 clock display modes.
- **Power-Off Memory:** All settings are saved automatically and retained after power-off.
- **Remote Control:** Provides convenient adjustment of all settings and real-time monitoring of music level status.
- **Durable Design:** Constructed with CNC machined aluminum and transparent acrylic case for both durability and aesthetic appeal.

3. Package Contents

- 1 × VFD253 Audio Spectrum Analyzer

- 1 × USB Cable (Type-C)
- 1 × Remote Control
- 2 × Anti-slip Pads (for bottom placement)
- 1 × User Manual

Figure 3.1: Contents of the VFD253 package, including the spectrum analyzer, USB cable, remote control, anti-slip pads, and user manual.

4. Product Overview

The VFD253 unit features a clear VFD display on the front and various input/output ports on the rear for versatile connectivity.

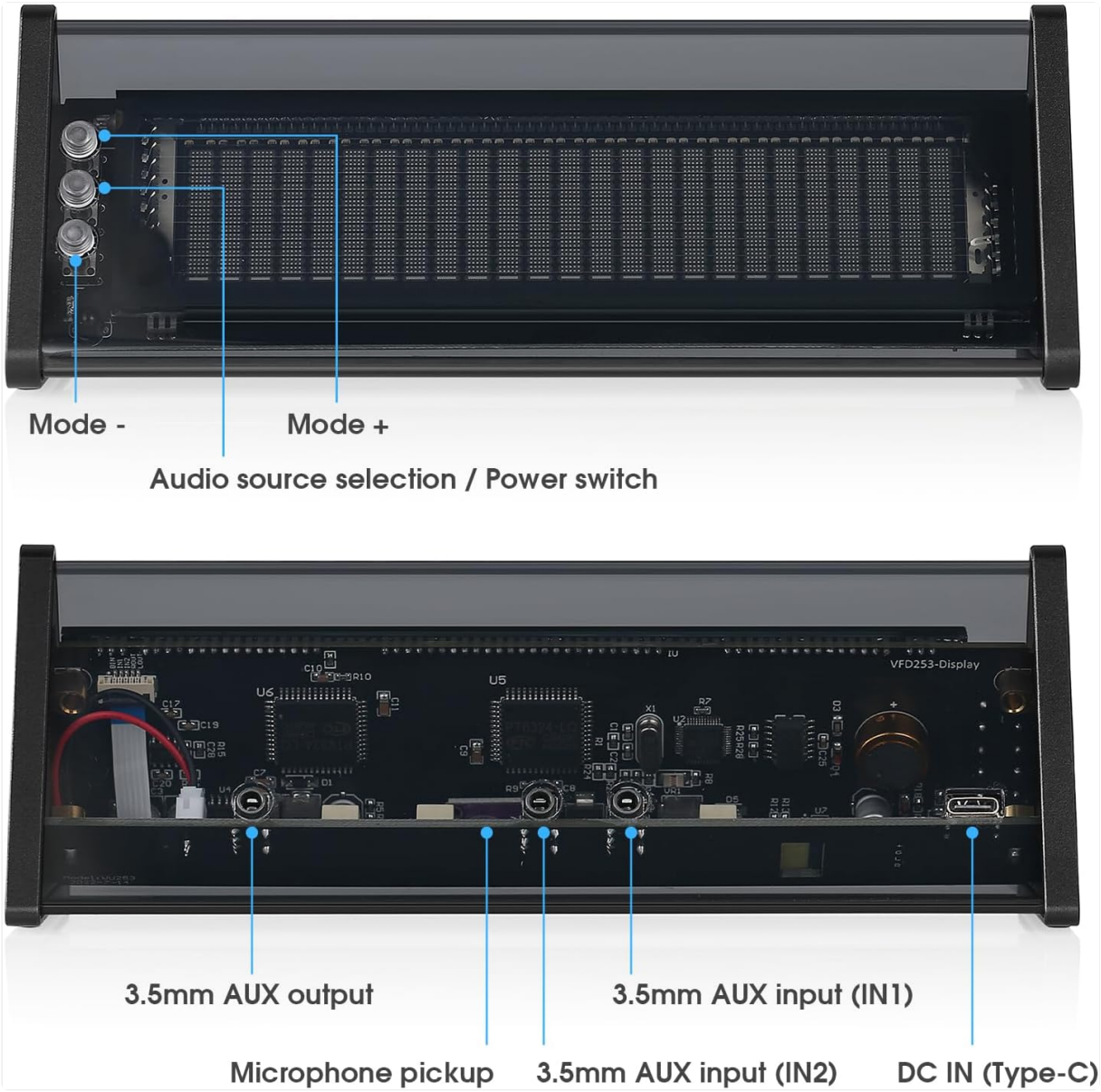

Figure 4.1: Rear panel of the VFD253, showing the 3.5mm AUX output, microphone pickup, two 3.5mm AUX inputs (IN1, IN2), and the DC 5V Type-C power input. The front panel features 'Mode -', 'Mode +', and 'Audio source selection / Power switch' buttons.

The device integrates multiple functions, serving as an audio spectrum analyzer, a Bluetooth receiver, an audio switcher, and a high-precision clock. The display dynamically visualizes audio signals or shows the current time.

Figure 4.2: The VFD253 showcasing its multi-functional capabilities, including audio spectrum analysis, Bluetooth reception, and clock display. The image highlights the various input/output options available.

5. Setup Instructions

1. **Power Connection:** Connect the provided USB Type-C cable to the DC 5V input port on the rear of the VFD253 and plug the other end into a suitable 5V power adapter (not included).
2. **Audio Input (Wired):**
    - For external audio sources (e.g., phone, PC, amplifier), use a 3.5mm audio cable to connect your source to either the IN1 or IN2 3.5mm AUX input ports on the rear panel.
    - *Note: 3.5mm AUX1 and 3.5mm AUX2 cannot be used simultaneously. Select one audio source at a time.*
    - For ambient sound visualization, the built-in microphone pickup can be used.
3. **Audio Input (Bluetooth):**
    - Ensure the VFD253 is powered on.
    - Select Bluetooth mode using the audio source selection button on the front panel or the remote control.
    - On your device (e.g., smartphone, tablet), search for Bluetooth devices and select "VFD253" to pair.

4. **Audio Output:** If you wish to pass the audio signal through the VFD253 to another device (e.g., headphones, amplifier), connect a 3.5mm audio cable from the 3.5mm AUX output port on the rear panel to your desired output device.
5. **Placement:** Attach the two anti-slip pads to the bottom of the unit for stability. Place the VFD253 on a stable, flat surface.

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Video 5.1: Demonstration of the VFD Audio Spectrum Analyzer's various display modes and settings. This video illustrates how the device responds to audio input and cycles through different visual effects.

6. Operating Instructions

6.1. Basic Operation

- **Power On/Off:** Press and hold the "Audio source selection / Power switch" button on the front panel or use the power button on the remote control.
- **Audio Source Selection:** Briefly press the "Audio source selection / Power switch" button on the front panel or the dedicated input selection buttons on the remote (MIC / Bluetooth / IN1 / IN2) to cycle through available audio inputs.
- **Mode Switching:** Use the "Mode -" and "Mode +" buttons on the front panel or the remote control to switch between music spectrum display modes and clock display modes.

6.2. Display Modes

The VFD253 offers two main display categories: music spectrum and clock.

- **Music Spectrum Display:** Features 5 distinct visual modes to represent audio frequencies.
- **Clock Display:** Offers 2 different clock display styles.
- **Auto Mode:** The device can automatically switch between music spectrum display (when music is detected) and clock display (when no music input is present).

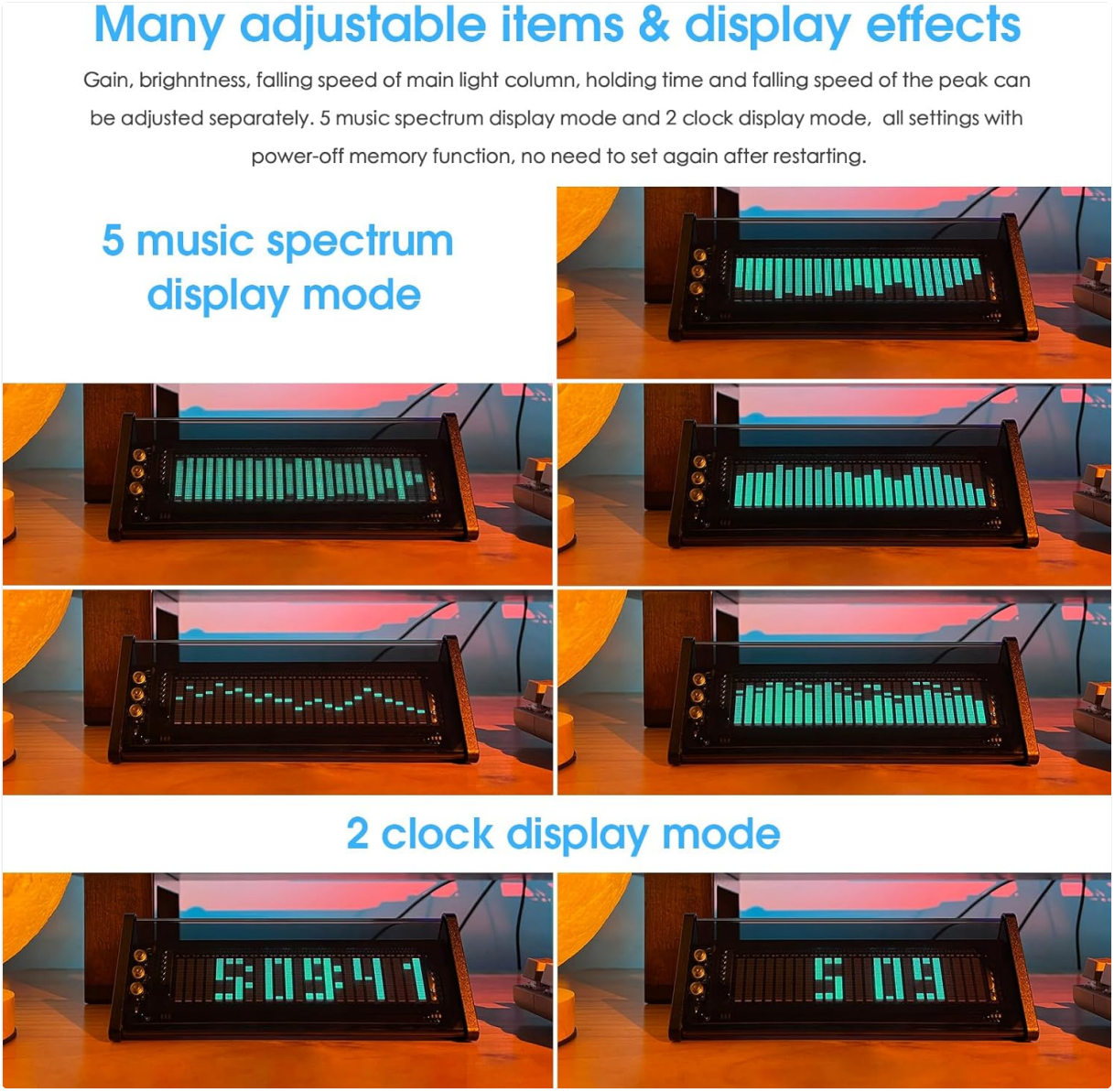

Figure 6.1: Examples of the 5 music spectrum display modes and 2 clock display modes available on the VFD253. Users can cycle through these options to suit their preference.

6.3. Adjusting Settings (Using Remote Control)

The remote control provides comprehensive access to all adjustable settings.

Figure 6.2: The VFD253 unit shown with its remote control, illustrating the convenience of adjusting settings from a distance.

- **Brightness:** Adjust the display brightness through 5 levels or enable auto-adjustment.
- **Gain:** Modify the input gain across 5 levels to optimize display sensitivity for different audio sources.
- **Spectrum Parameters:** Independently adjust the falling speed of the main light column, the peak holding time, and the peak falling speed to customize the visual response.
- **Clock Settings:** Set the time and date as needed. Refer to the remote control's specific buttons for time adjustment.

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Video 6.3: A demonstration of the music spectrum level light, showcasing its dynamic response to audio and various display patterns. This video highlights the visual appeal and functionality of the spectrum analyzer.

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Video 6.4: This video illustrates the music spectrum display in action, demonstrating how it visually represents different audio frequencies and patterns. It provides a clear view of the device's real-time audio visualization capabilities.

7. Specifications

Parameter	Value

Parameter	Value
Display Screen	VFD (Vacuum Fluorescent Display)
Resolution	25 × 15
Frequency Range Supported	80Hz-16KHz
Display Item	Music Spectrum / Clock
Audio Signal Input	MIC / Bluetooth 5.0 / 2 groups of 3.5mm AUX
Audio Signal Output	1 group of 3.5mm AUX
Work Mode	Auto mode (spectrum with music, clock without music) / Clock display mode (always)
Clock Display Modes	2 kinds
Music Spectrum Display Modes	5 kinds
Music Display Mode	AGC + customized output curve (Real output / Smooth output)
Adjustable Items	Main light column falling speed / Peak holding time / Peak falling speed
Brightness Adjustment	5 levels + auto adjustment
Gain Adjustment	5 levels
Power-off Memory Function	Supported
Remote Control	Supported
Working Voltage	DC 5V
Dimensions (W*D*H)	184*75*66mm / 7.24*2.95*2.60in
Net Weight	322g / 0.71lb
Package Weight	500g / 1.10lb

8. Troubleshooting

- **No Power:** Ensure the USB Type-C cable is securely connected to both the VFD253 and a working 5V power source. Try a different USB cable or power adapter.
- **No Audio Spectrum Display:**
  - Check if an audio source is playing and connected correctly (wired AUX or Bluetooth).
  - Verify the correct input source is selected on the VFD253.
  - Adjust the gain setting using the remote control to increase sensitivity.
  - If using the microphone, ensure there is ambient sound for pickup.
- **Bluetooth Connection Issues:**
  - Ensure the VFD253 is in Bluetooth pairing mode.
  - Disable and re-enable Bluetooth on your source device.
  - Move your source device closer to the VFD253 to improve signal strength.

- Forget the device on your source and attempt to re-pair.

- **Incorrect Time Display:** Use the remote control to set the correct time. Refer to the remote control's specific buttons for time adjustment.
- **Remote Control Not Responding:**
  - Check and replace the batteries in the remote control.
  - Ensure there are no obstructions between the remote and the VFD253's IR receiver.

9. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the unit. Avoid using harsh chemicals or abrasive materials that could damage the display or casing.
- **Storage:** When not in use for extended periods, store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- **Handling:** Handle the unit with care to prevent physical damage, especially to the VFD display.

10. Warranty and Support

For warranty information and technical support, please refer to the documentation included with your purchase or visit the official Douk Audio website. Keep your purchase receipt as proof of purchase for warranty claims.