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Seesii TinySA ULTRA+ ZS406

SEESII TinySA Ultra+ ZS406 5.4GHz Spectrum Analyzer User Manual

Model: TinySA ULTRA+ ZS406 | Brand: Seesii

1. Product Overview

The SEESII TinySA Ultra+ ZS406 is a versatile 2-in-1 device functioning as both a high-performance spectrum analyzer and a signal generator. It features an ultra-wide measuring frequency range from 100kHz to 5.4GHz, with an Ultra mode extending up to 6GHz. Designed for engineers, hobbyists, and ham radio enthusiasts, this portable RF test kit is suitable for various applications including antenna tuning, EMI testing, and RF circuit debugging.

The device comes equipped with a 4-inch color display, a built-in 3000mAh battery for extended use, and PC connectivity for advanced control and data transfer. Its robust design is complemented by an included EVA waterproof and shockproof protective case, ensuring durability and portability.



Image 1.1: The SEESII TinySA Ultra+ ZS406 Spectrum Analyzer and its included accessories.

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Video 1.1: An overview of the Seesii TinySA Ultra+ ZS406 Kit, highlighting its features and the included 4-inch hard case.

2. Package Contents

Verify that all items are present in your package:

- TinySA Ultra+ ZS406 Spectrum Analyzer
- EVA Waterproof Shockproof Protective Case
- USB Type-C Charging Cable
- Stylus Pen
- 32GB MicroSD Card (pre-installed or included separately)
- SMA Cables and Adapters (various types for connectivity)
- Antenna



Image 2.1: The TinySA Ultra+ ZS406 device shown alongside its protective hard case.

3. Initial Setup

3.1 Charging the Device

Before first use, fully charge the TinySA Ultra+ ZS406. Connect the provided USB Type-C cable to the device's Type-C port and a suitable USB power source (e.g., computer USB port or wall adapter). The device features a 3000mAh battery, providing long-lasting operation.



Image 3.1: The TinySA Ultra+ ZS406 connected for charging via its USB-C port.

3.2 Inserting the MicroSD Card

The device supports a MicroSD card for data storage. If not pre-installed, gently insert the 32GB MicroSD card into the designated slot until it clicks into place. This card is used for saving measurements and firmware updates.

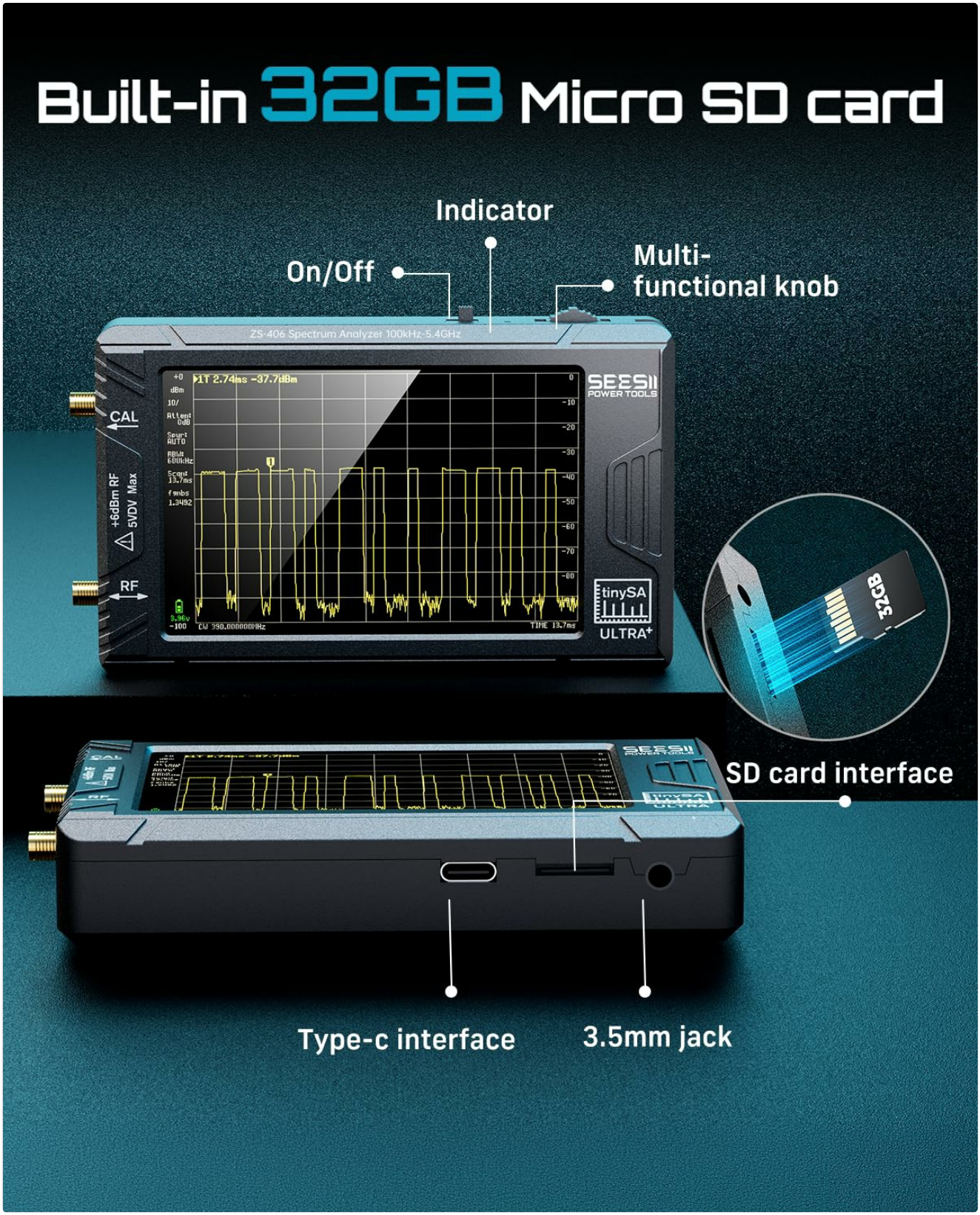


Image 3.2: Close-up view of the TinySA Ultra+ ZS406 ports, including the MicroSD card slot.

3.3 Connecting to a PC

The TinySA Ultra+ ZS406 can be connected to a PC via USB to function as a PC-controlled spectrum analyzer or signal generator. Use the provided USB cable to connect the device to your computer. For Windows PCs, the necessary drivers should install automatically. For Linux and Mac, drivers are typically built into the kernel or available through the TinySA-APP software.

The TinySA-APP software allows for direct data transfer and control over the serial interface, offering a comprehensive set of commands for measurements and internal settings adjustments.

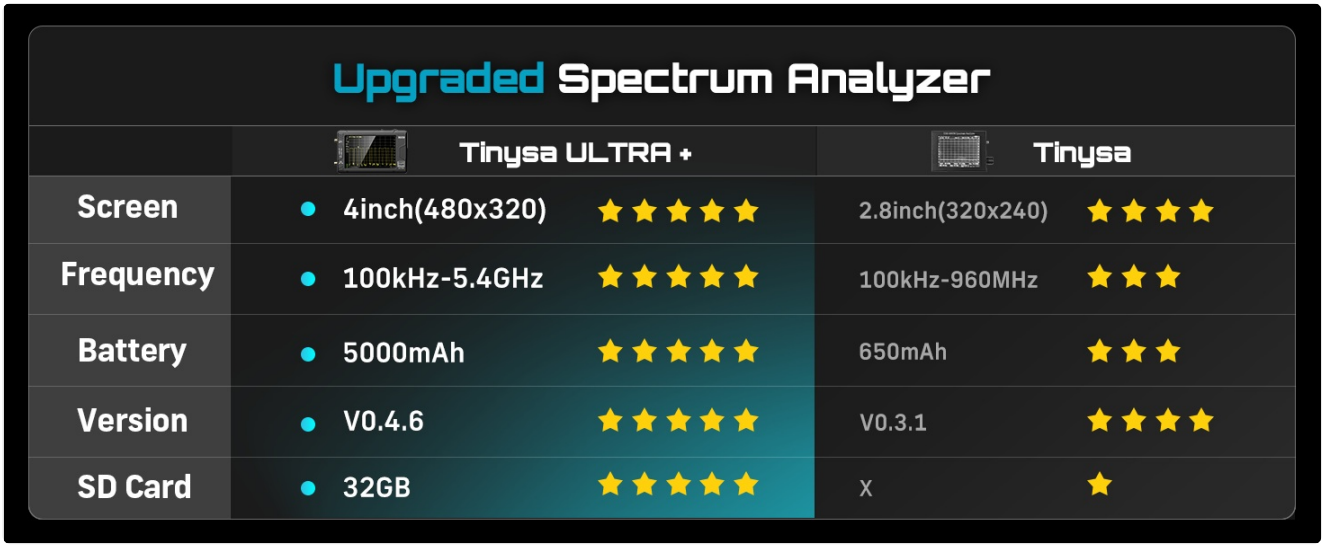


Image 3.3: The TinySA Ultra+ ZS406 connected to a laptop, demonstrating PC control capabilities.

4. Operating Instructions

4.1 Power On/Off

Locate the multi-functional knob on the device. Press and hold this knob to power the device on or off.

4.2 Spectrum Analyzer Function

The device operates as a spectrum analyzer with a frequency range of 0.1-800MHz in standard mode and 0.1MHz-6GHz in Ultra mode. It features switchable resolution band pass filters from 200Hz to 850kHz, allowing for precise signal analysis. The 4-inch color display shows up to 450 scan points, covering the full low or high-frequency range.



Image 4.1: The TinySA Ultra+ ZS406 displaying a frequency spectrum, highlighting its wide measurement range.

4.3 Signal Generator Function

In addition to spectrum analysis, the device can generate signals. It provides sine/square wave output from 0.1-800MHz (standard) and up to 4.4GHz. A built-in calibration signal is also available.



Image 4.2: Illustration of the TinySA Ultra+ ZS406's dual functionality as both a spectrum analyzer and a signal generator.

4.4 Using the Touchscreen and Knob

Navigate the device's interface using the 4-inch smart touchscreen. You can interact directly with your finger, a touchscreen pen, or a touch plectrum for precise control. The multi-functional knob also allows for menu navigation and parameter adjustments.



Image 4.3: Various methods of interacting with the 4-inch touchscreen of the TinySA Ultra+ ZS406.

4.5 Built-in LNA and Attenuator

The device includes a built-in Low Noise Amplifier (LNA) for amplifying weak signals and an attenuator to prevent signal overload. These features enhance measurement accuracy and protect the device from strong inputs.

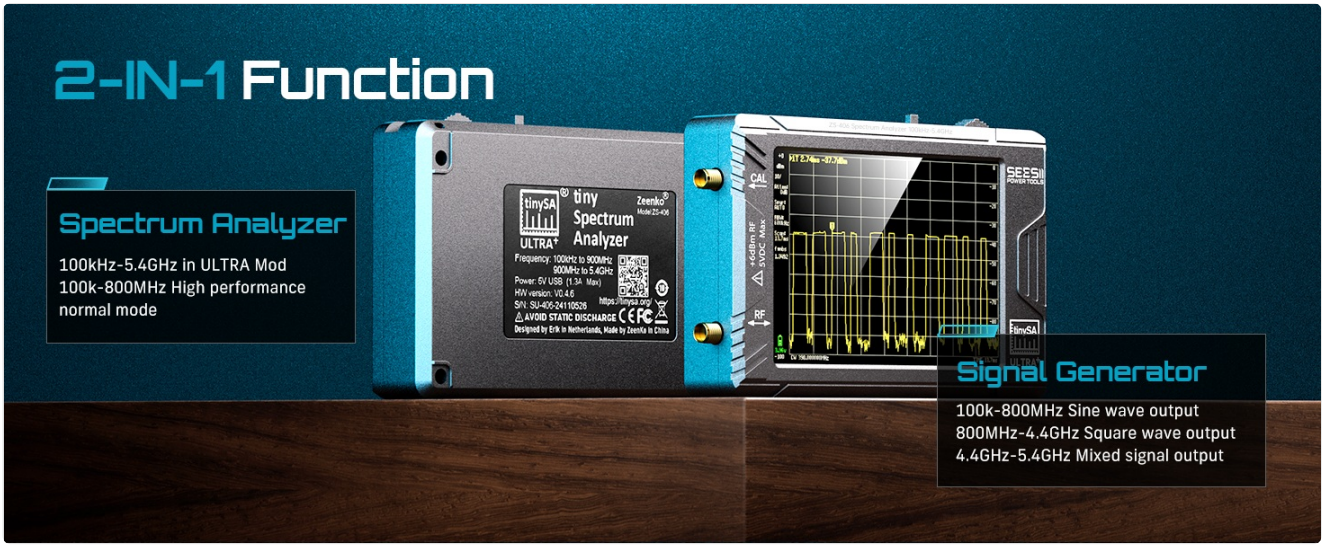


Image 4.4: Visual representation of the built-in LNA and Attenuator for signal management.

5. Maintenance

5.1 Cleaning

To clean the device, use a soft, dry cloth. For the screen, a microfiber cloth is recommended. Avoid using harsh chemicals or abrasive materials that could damage the screen or casing.

5.2 Storage

When not in use, store the TinySA Ultra+ ZS406 in its provided EVA waterproof and shockproof protective case. This case features a soft screen protection layer, shock-absorbing foam, a mesh pocket for accessories, a smooth zipper, and a reinforced handle, ensuring the device is protected from physical damage and environmental factors.



Image 5.1: Detailed view of the protective EVA hard case, highlighting its internal and external features.



Image 5.2: The protective case with its hand strap, emphasizing portability.

6. Troubleshooting

If you encounter issues with your TinySA Ultra+ ZS406, consider the following general troubleshooting steps:

- **Device not powering on:** Ensure the battery is sufficiently charged. Connect the device to a power source using the USB-C cable and try again.
- **No signal detected:** Check all cable connections (SMA, antennas). Ensure the correct frequency range and resolution filters are selected in the settings. Verify that the input signal is within the device's measurable

range.

- **PC connection issues:** Ensure the USB cable is securely connected. For Windows, check Device Manager for proper driver installation. Try a different USB port or cable.
- **Inaccurate readings:** Perform a calibration if available in the device menu. Ensure no strong interfering signals are present nearby.
- **Screen unresponsive:** Try restarting the device. If the issue persists, ensure the screen is clean and free of debris.

For persistent issues, refer to the official TinySA documentation online or contact customer support.

7. Technical Specifications

Feature	Specification
Model Number	TinySA ULTRA+ ZS406
Frequency Range	100kHz to 5.4GHz (Ultra mode up to 6GHz)
Display	4-inch Color Touchscreen (480x320)
Battery Capacity	3000mAh (approx. 8 hours working time)
Resolution Bandwidth Filters	200Hz to 850kHz
Signal Generator Output	0.1-800MHz (Sine/Square wave), up to 4.4GHz (Square wave), 4.4GHz-5.4GHz (Mixed signal)
Internal Storage	32GB MicroSD Card
PC Connectivity	USB Type-C (Windows/Linux/Mac compatible)
Dimensions	7.13 x 4.84 x 2.13 inches
Item Weight	15.8 ounces



Image 7.1: A comparison table highlighting the upgraded features of TinySA Ultra+ compared to the standard TinySA.

8. Warranty and Support

8.1 Warranty Information

The SEESII TinySA Ultra+ ZS406 comes with a 36-month warranty, ensuring long-term reliability and support for your product.

8.2 Customer Support

For any questions, technical assistance, or warranty claims, please contact Seesii customer support. We aim for 100% customer satisfaction and offer quick responses within 24 hours.

You can typically find contact information on the official Seesii website or through your purchase platform.

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