UT662 Series Multi-functional Intelligent Leak Detector User Manual

1. Introduction

The UNI-T UT662 series is a multi-functional intelligent leak detector designed for high-precision detection of water leaks in various plumbing systems, including underfloor heating, indoor pipes, and outdoor pipelines. Utilizing advanced AI technology, it effectively filters environmental noise to accurately identify leak sounds. This manual provides essential information for the safe and efficient operation of your UT662 series device.

2. Package Contents

Please check the contents of your package upon receipt. The standard UT662B package includes:

- Multi-functional Intelligent Leak Detector (UT662B/C/D) x1
- Headphones x1
- Vertical Sensor (UT-CS002) x1
- Horizontal Sensor (UT-CS001) x1 (Included with UT662C/D models)
- Base with Listening Rod (UT-CS003) x1 (Included with UT662E model, not standard for B/C/D)
- Charging Adapter (5V2A) x1
- Type-C Data Cable x1
- Shoulder Strap x1
- Cloth Bag x1
- Instruction Manual x1
- Warranty Card/Certificate of Conformity x1

3. Setup

1. **Charging the Device:** Connect the provided Type-C data cable to the device and the charging adapter. Plug the adapter into a power outlet (Input: 100-240VAC/50Hz/60Hz 0.45A, Output: 2A/5V DC). The device features an 8000mAh lithium battery for long-lasting operation.
2. **Attaching Sensors:** Select the appropriate sensor for your detection task.
    - **Vertical Sensor (UT-CS002):** Suitable for ground and most indoor environments. Connect the sensor cable to the device.
    - **Horizontal Sensor (UT-CS001):** Ideal for walls, under cabinets, and other narrow spaces. Connect the sensor cable to the device.
    - **Listening Rod (UT-CS003):** For outdoor environments, attach the listening rod to the horizontal sensor base.

3. **Connecting Headphones:** Plug the headphones into the designated audio jack on the device. Ensure a secure connection for clear audio feedback.
4. **Powering On:** Press and hold the power button until the screen illuminates.

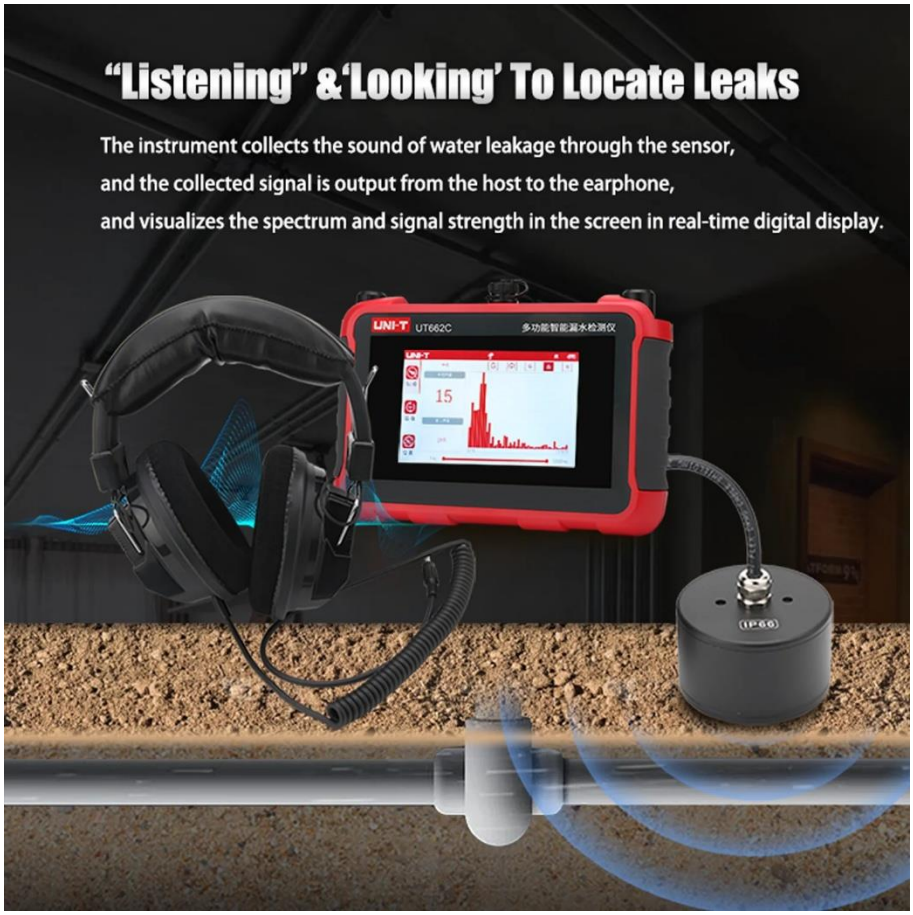
4. Operating Instructions

The UT662 series features a touch-sensitive color LCD for intuitive operation.

4.1. General Operation

- **Screen Display:** The device displays real-time spectrum and signal strength. UT662B/C models feature a 5-inch (800*480 resolution) LCD, while UT662D models feature a 7-inch (1024*600 resolution) LCD.
- **Adjustable Gain and Volume:** Use the left knob to adjust gain and the right knob to adjust volume. This allows for quick adaptation to different measurement conditions and ensures no faint sounds are missed. The device offers 10 levels of gain adjustment.
- **Language Selection:** The device supports Chinese and English languages.

Auto Sleep: Configure auto-sleep settings for 10, 15, or 30 minutes to conserve battery life.



4.2. Leak Detection Modes

The UT662 series offers various modes to assist in precise leak detection:

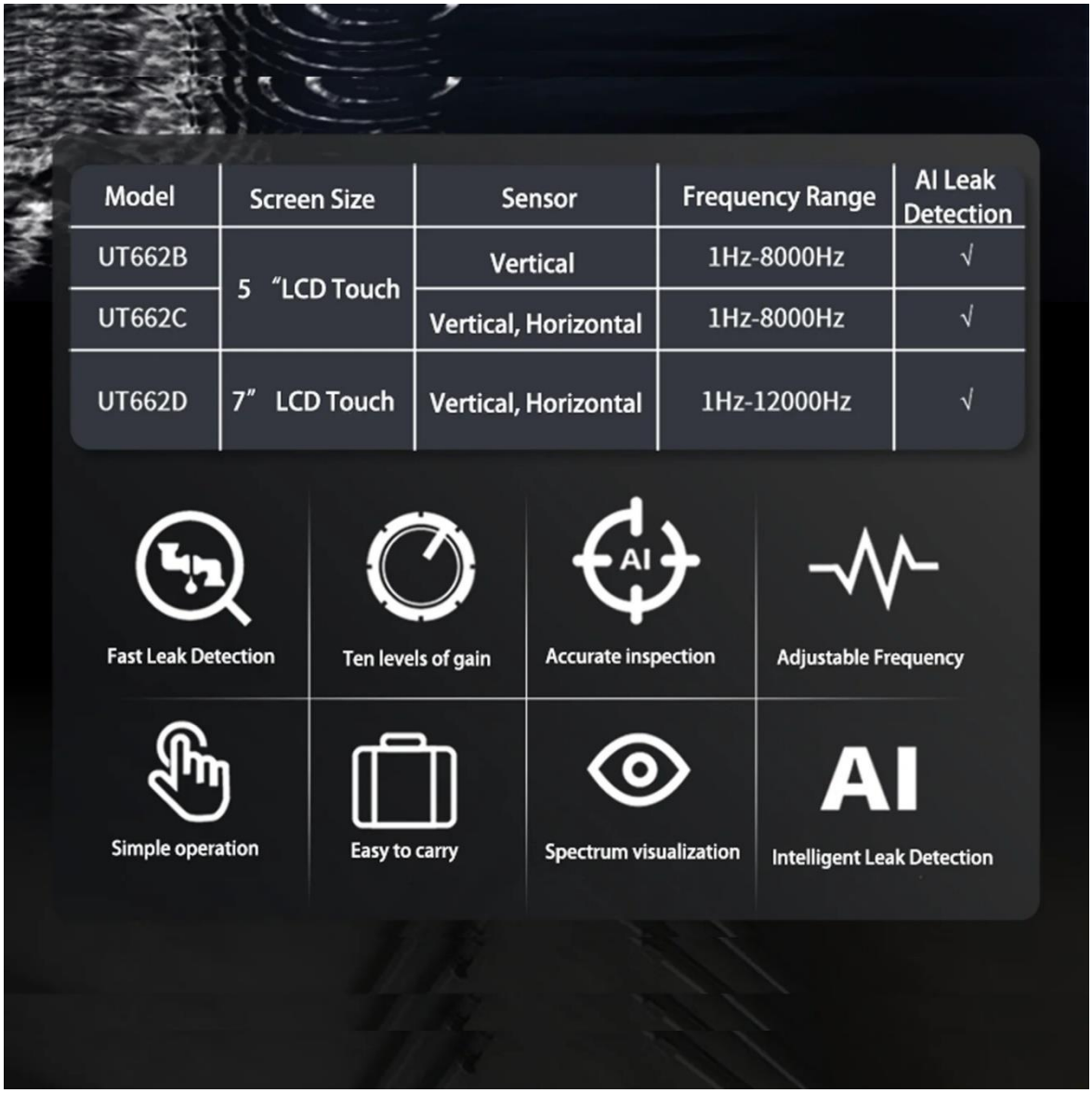
- **Quick Check Mode:** Displays all sound signals within the frequency response range and their frequency spectrum. This allows for rapid localization of the approximate leak point. You can switch between bar graph and line graph displays.
- **Inspection Mode:** The instrument displays a bar graph collection interface. Move the sensor across the suspected area. Click on the corresponding signal bar to start collecting signals. Compare the collected signal bars to accurately locate the leak point.
- **AI Intelligent Leak Detection:** This mode effectively removes pipeline noise and environmental interference, accurately identifying the sound of water leakage. In quick check mode, click the “AI” icon for the device to intelligently determine and display abnormal signal points (blue bars).

- **Multi-band Frequency Range:** In quick check mode, the instrument can set multiple frequency ranges to adapt to different leak scenarios. Adjust high, mid, and low bands to exclude other frequency interferences. Manual adjustment is also possible in full-band mode.
- **Effective Volume Display:** Displays effective volume, excludes environmental noise, and focuses on leak volume. Effectively shields impact sounds and other noises, highlighting leak sounds and suspected leak sounds.
- **Recording Function:** Collects on-site leak sounds for archiving or comparison of multiple leak recordings. The recording time is 10 seconds.
- **Screenshot Function:** Capture screenshots of the display for documentation.
- **PC Data Viewing:** Enable the “PC data viewing” function in settings. Connect the device to a computer via USB to view captured screenshots and recording files.

4.4. Application Scenarios

The UT662 series is suitable for various leak detection applications:

- Indoor buried pipe leak detection
- Underfloor heating pipe leak detection
- Cabinet body pipe leak detection
- Outdoor pipe leak detection



4.5. Combining with Thermal Imager for Underfloor Heating Leak Detection

For underfloor heating systems, the UT662 can be used in conjunction with a thermal imager for enhanced precision:

1. **Pressure Check:** Apply pressure to the underfloor heating pipes to confirm if there are pressure drops or leaks.
2. **Hot Water Injection:** Inject hot water (70°C or above) into the pipes. Wait approximately 15 minutes for the heat to transfer to the ground surface.
3. **Thermal Imaging Scan:** Use an infrared thermal imager to scan the floor surface to detect the path of the pipes and identify potential leak areas. Leak points may appear as distinct thermal clusters or areas with unusual temperature patterns.
4. **UT662 Fine-tuning:** Once a suspected leak area is identified by the thermal imager, use the UT662 series leak detector in that specific region. Analyze the frequency waveform and sound values. A clear change in waveform, higher sound frequency, and louder leak sound indicate the precise leak point.
5. **Mark and Repair:** After accurately locating the leak point, mark the area for excavation and repair.

5. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the device and sensors. Do not use abrasive cleaners or solvents.
- **Storage:** Store the device in a cool, dry place, away from direct sunlight and extreme temperatures. Ensure all components are dry before storage.
- **Battery Care:** For long-term storage, charge the battery to approximately 50% every three months to maintain battery health.
- **Sensor Care:** Handle sensors with care to avoid damage. Keep sensor surfaces clean for optimal performance.
- **Software Updates:** Check the manufacturer's website periodically for any available software updates to ensure optimal performance and new features.

6. Troubleshooting

- **Device Not Powering On:** Ensure the battery is sufficiently charged. Connect the device to the charger and try again. If the issue persists, contact support.
- **No Sound from Headphones:** Check if the headphones are securely plugged in. Verify the volume settings on the device. Test with another pair of headphones if possible.
- **Inaccurate Readings/Excessive Noise:** Ensure the sensor is making good contact with the surface. Adjust the gain and frequency range settings to filter out environmental noise. Move to a quieter environment if possible.

- **Device Freezes:** Try restarting the device by holding down the power button. If it remains unresponsive, allow the battery to fully discharge and then recharge before attempting to power on again.
- **PC Connection Issues:** Ensure the Type-C cable is properly connected to both the device and the computer. Verify that the “PC data viewing” function is enabled in the device settings. Try a different USB port or cable.

7. Specifications

UT662 Series General Specifications

Attribute	Value
Brand Name	UNI-T
DIY Supplies	Electrical
Certification	CE
Origin	Mainland China
Dimensions	212mm x 140mm x 46.5mm
Operating Mode	Auto Range
Display Type	Digital Display
Battery Included	Yes
Hign-concerned Chemical	None
DC Voltage	None
AC Voltage	None
Measurement Range (UT662B/UT662C)	1Hz-8000Hz adjustable frequency

Measurement Range (UT662D)	1Hz-12000Hz adjustable frequency
LCD Size (UT662B/UT662C)	5 inches (800*480 resolution)
LCD Size (UT662D)	7 inches (1024*600 resolution)
Measuring Depth	Approx. 100cm (1 meter)
Charging Adapter	Input: 100-240VAC/50Hz/60Hz 0.45A, Output: 2A/5V DC
Battery	DC3.7V lithium battery 8000mAh
Response Time	Real time
AI Intelligence Assisted Leakage Detection	Yes
Screenshot Function	Yes
Recording Time	10s
Data Show Real-time	Display of numbers, bar graphs, line graphs
Auto Sleep	10, 15, 30 minutes
Language Selection	Chinese/English
Working Temperature and Humidity	20°C~50°C; <85%RH
Storage Temperature and Humidity	40°C~60°C; <75%RH
Suitable for Safety Regulations	IEC 61010

8. User Tips

- **Language Support:** The device menu is available in Chinese and English only. Portuguese (Brazil) is not supported.
- **Optimal Detection:** For best results, ensure the sensor is placed firmly on the surface being inspected. Minimize ambient noise as much as possible.
- **Underfloor Heating:** When detecting leaks in underfloor heating, injecting hot water (above 70°C) and waiting for about 15 minutes can significantly improve the accuracy of detection, especially when combined with a thermal imager.

9. Warranty and Support

UNI-T products are manufactured to high-quality standards. For warranty information, please refer to the warranty card included in your package. For technical support or service inquiries, please contact your local UNI-T distributor or visit the official UNI-T website.