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## Helix MTK1

# Helix MTK1 Measurement Microphone Kit User Manual

Comprehensive guide for setting up and using your Helix MTK1 for DSP audio analysis.

## 1. PRODUCT OVERVIEW

The Helix MTK1 is a specialized measurement microphone kit designed for precise audio analysis and calibration of Digital Signal Processors (DSPs), particularly for Helix and Match DSP products. Accurate DSP tuning requires more than just auditory perception; it necessitates proper measurement equipment. This kit provides the essential tools to work with the integrated real-time audio analyzer within the DSP PC-Tool software, ensuring optimal sound system optimization.



Figure 1: All components included in the Helix MTK1 kit. This includes the measurement microphone, external USB sound card, microphone cable, USB cable, and a USB stick with software and test signals.

### 1.1 Package Contents

- 1x Measurement Microphone
- 1x External USB Sound Card with Phantom Power

- 1x Microphone Cable (2.5 m)
- 1x USB Stick with Test Signals and Software
- 1x USB Cable





Figure 2: The Helix MTK1 kit neatly packed in its protective carrying case, ensuring safe transport and storage of all components.

## 2. SETUP AND INSTALLATION

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Follow these steps to correctly set up your Helix MTK1 measurement microphone kit for use with your DSP system.

### 2.1 Software Installation

1. Insert the provided USB stick into your computer's USB port.
2. Locate and install the necessary DSP PC-Tool software and any required drivers from the USB stick. Ensure your operating system is compatible.
3. It is recommended to check the Audiotec Fischer website for the latest software and driver updates after initial installation.

### 2.2 Hardware Connection

1. Connect the measurement microphone to the external USB sound card using the supplied 2.5m microphone cable. Ensure a secure connection.
2. Connect the external USB sound card to your computer using the provided USB cable. The sound card will draw power via USB and provide phantom power to the microphone.
3. Ensure all connections are firm and free from kinks or strain.

## 3. OPERATING INSTRUCTIONS

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Once the hardware is connected and software installed, you can begin using the Helix MTK1 for DSP calibration.

### 3.1 Preparing for Measurement

- Position the measurement microphone at the primary listening position within your audio environment. For car audio, this is typically the driver's headrest area.
- Ensure the microphone is stable and not subject to vibrations. A microphone stand is highly recommended.
- Close any unnecessary applications on your computer to prevent interference.
- Launch the DSP PC-Tool software.

### 3.2 Using the Real-Time Audio Analyzer (RTA)

1. Within the DSP PC-Tool software, navigate to the Real-Time Audio Analyzer (RTA) section.
2. Select the Helix MTK1 USB sound card as your audio input device within the software settings.
3. Play the test signals provided on the USB stick through your audio system. These signals are crucial for accurate frequency response measurements.
4. Observe the RTA display. It will show the frequency response of your audio system as measured by the microphone.
5. Adjust your DSP settings (e.g., equalization, time alignment, crossovers) based on the RTA readings to achieve your desired target curve. Refer to the DSP PC-Tool software manual for detailed instructions on specific adjustments.

6. Repeat measurements and adjustments until the desired acoustic response is achieved.

## 4. MAINTENANCE AND CARE

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Proper care will extend the life and ensure the accuracy of your Helix MTK1 kit.

- **Cleaning:** Use a soft, dry cloth to clean the microphone and sound card. Do not use liquid cleaners or solvents.
- **Storage:** Store all components in the provided protective case when not in use. Keep the kit in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Handling:** Handle the microphone and sound card with care. Avoid dropping or subjecting them to physical shock.
- **Cable Care:** Do not bend cables sharply or place heavy objects on them. Coil cables loosely for storage.

## 5. TROUBLESHOOTING

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If you encounter issues with your Helix MTK1, refer to the following common problems and solutions.

Problem	Possible Cause	Solution
Microphone not detected by software.	Drivers not installed or corrupted; incorrect USB port; faulty cable connection.	Ensure drivers are installed from the USB stick or Audiotec Fischer website. Try a different USB port. Check all cable connections. Restart computer.
No audio input in RTA.	Incorrect input device selected in DSP PC-Tool; microphone not receiving phantom power.	Verify the Helix MTK1 USB sound card is selected as the input device in the software. Ensure the USB sound card is properly connected and powered.
Inaccurate RTA readings.	Improper microphone placement; external noise interference; incorrect test signals.	Ensure microphone is positioned correctly at the listening point. Minimize background noise. Use only the provided test signals.

## 6. TECHNICAL SPECIFICATIONS

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Feature	Detail
Brand	Helix
Model Number	MTK1
Connectivity	USB
Microphone Cable Length	2.5 meters
Power Source	USB (with Phantom Power for mic)
Compatibility	Helix and Match DSP products
Included Software/Data	DSP PC-Tool software, Test Signals

## 7. WARRANTY AND SUPPORT

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For specific warranty information, please refer to the documentation included with your purchase or visit the official Audiotec Fischer website. Warranty terms may vary by region and retailer.

For technical support, software updates, or additional resources, please visit the official Audiotec Fischer website or contact their customer service department. Keep your product model number (MTK1) and purchase details ready when seeking support.

Official Website: [www.audiotec-fischer.com](http://www.audiotec-fischer.com)

