

Kramer AFM-20DSP-AEC

Kramer AFM-20DSP-AEC 20-Port Audio Matrix with DSP User Manual

Model: AFM-20DSP-AEC | Brand: Kramer

1. INTRODUCTION

The Kramer AFM-20DSP-AEC is an advanced, professional audio matrix switcher designed for versatile audio routing and processing. This device features 20 analog ports configurable as inputs or outputs, multi-channel DSP, Acoustic Echo Cancellation (AEC), a built-in power amplifier, and a Dante interface. This manual provides essential information for the proper setup, operation, and maintenance of your AFM-20DSP-AEC unit.

2. PACKAGE CONTENTS

Verify that all items are present in your package:

- Kramer AFM-20DSP-AEC 20-Port Audio Matrix with DSP
- Power Cord
- Rack Ears (if applicable)
- Terminal Block Connectors
- Quick Start Guide (refer to this manual for full details)

3. PHYSICAL DESCRIPTION AND CONNECTIONS

The AFM-20DSP-AEC features a robust design with various ports and indicators on its front and rear panels. Understanding these components is crucial for proper installation and operation.

3.1 Front Panel



Figure 1: Front and Rear Panels of the AFM-20DSP-AEC. The front panel displays the Kramer logo, status indicator, 20 port status LEDs, Dante indicators, HDMI embed/de-embed indicators, USB/S/PDIF indicators, and amplifier channel indicators. The model number AFM-20DSP-AEC is also visible.

- **Kramer Logo:** Brand identification.
- **STATUS LED:** Indicates the operational status of the unit.
- **PORTS LEDs (1-20):** Indicate the status of each of the 20 configurable audio ports.
- **DANTE IN/OUT LEDs:** Indicate Dante network activity.
- **HDMI EMBED/DE-EMBED LEDs:** Indicate HDMI audio embedding or de-embedding status.
- **USB S/PDIF IN/OUT LEDs:** Indicate USB or S/PDIF audio input/output activity.
- **AMPLIFIER CH.1/CH.2 LEDs:** Indicate the status of the built-in amplifier channels.

3.2 Rear Panel



Figure 2: Rear Panel Connections of the AFM-20DSP-AEC. This view shows the 20 analog audio ports (XILICA Onboard), USB port, HDMI input/output, S/PDIF input/output, Speaker Out (Lo-Z), COM port, Dante Ethernet ports, RS-232 port, Reset button, USB Prog. port, and the AC power inlet with power switch.

- **XILICA Onboard PORTS (1-20):** Terminal block connectors for analog audio inputs/outputs. Each port includes connections for signal (+) and ground (G).
- **USB Port:** For connecting to a computer for configuration and control.
- **HDMI IN/OUT:** HDMI ports for audio embedding and de-embedding.
- **S/PDIF IN/OUT:** Coaxial S/PDIF digital audio connections.
- **SPEAKER OUT (Lo-Z):** Terminal block for low-impedance speaker connections (L+, L-, R+, R-).
- **Hi-Z / COM:** Terminal block for high-impedance speaker output and common ground.
- **Dante ETHERNET Ports:** RJ-45 connectors for Dante audio networking.
- **RS-232:** Serial port for control system integration (G, Rx, Tx).
- **RESET Button:** For factory reset or reboot.
- **USB PROG. Port:** Dedicated USB port for firmware updates and programming.
- **AC Power Inlet:** For connecting the power cord.
- **Power Switch:** To turn the unit on or off.

4. SETUP AND INSTALLATION

Follow these steps for proper installation of your AFM-20DSP-AEC unit.

1. **Mounting:** Install the unit in a standard 19-inch equipment rack using the provided rack ears, or place it on a stable surface. Ensure adequate ventilation around the unit.
2. **Power Connection:** Connect the supplied power cord to the AC Power Inlet on the rear panel and then to a grounded AC power outlet. Do not power on the unit yet.
3. **Audio Connections:**
 - **Analog Audio:** Connect your analog audio sources and destinations to the XILICA Onboard PORTS (1-20) using appropriate terminal block connectors. Ensure correct polarity (+ and G).
 - **Digital Audio (S/PDIF):** Connect S/PDIF sources and destinations to the S/PDIF IN/OUT ports.
 - **HDMI Audio:** Connect HDMI sources to HDMI IN and displays/receivers to HDMI OUT for audio embedding/de-embedding.
 - **Dante Network:** Connect the Dante ETHERNET ports to your Dante-enabled network switch for Dante audio routing.
4. **Speaker Connections:** If using the built-in amplifier, connect your low-impedance speakers to the SPEAKER OUT (Lo-Z) terminal block. Observe correct polarity (L+, L-, R+, R-).
5. **Control Connections:**
 - **USB:** Connect the USB port to a computer for initial configuration and control via Kramer software.
 - **RS-232:** Connect to a control system using an RS-232 cable for external control.
6. **Power On:** Once all connections are secure, switch the Power Switch on the rear panel to the 'ON' position. Observe the STATUS LED and other indicators on the front panel.

5. OPERATING INSTRUCTIONS

The AFM-20DSP-AEC is primarily configured and controlled via Kramer's dedicated software interface, which provides access to its advanced DSP capabilities, matrix routing, and AEC functions.

- **Software Control:** Connect the unit to a computer via the USB port and launch the Kramer control software. This interface allows for:
 - Configuring input/output assignments for the 20 analog ports.
 - Managing multi-channel DSP settings (EQ, dynamics, routing).
 - Adjusting Acoustic Echo Cancellation (AEC) parameters for optimal performance.
 - Controlling HDMI audio embedding and de-embedding.
 - Monitoring Dante network status and routing.
 - Adjusting built-in amplifier output levels.
- **Dante Integration:** Utilize Dante Controller software for network-wide audio routing and management of Dante flows to and from the AFM-20DSP-AEC.
- **RS-232 Control:** Integrate the unit into a larger control system using RS-232 commands for automated operation. Refer to the Kramer programming guide for detailed command protocols.
- **Audio Signal Flow:** The unit allows for flexible routing of any input to any output, with DSP processing applied as configured. Ensure proper gain staging throughout your audio system to prevent clipping or noise.

6. MAINTENANCE

To ensure the longevity and optimal performance of your AFM-20DSP-AEC, follow these maintenance guidelines:

- **Cleaning:** Disconnect power before cleaning. Use a soft, dry cloth to wipe the exterior. Do not use liquid or aerosol cleaners.
- **Ventilation:** Ensure that the ventilation openings are not blocked. Overheating can damage the unit.
- **Firmware Updates:** Periodically check the Kramer website for firmware updates. Use the USB PROG. port and Kramer's update utility to install new firmware, following the provided instructions carefully.
- **Environmental Conditions:** Operate the unit within specified temperature and humidity ranges. Avoid exposure to direct sunlight, excessive dust, or moisture.

7. TROUBLESHOOTING

If you encounter issues with your AFM-20DSP-AEC, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No power	Power cord disconnected; Power switch off; Faulty power outlet.	Check power cord connection; Ensure power switch is ON; Test power outlet with another device.
No audio output	Incorrect routing in software; Muted channels; Incorrect input/output configuration; Faulty cables.	Verify routing and mute settings in Kramer software; Check analog, S/PDIF, HDMI, and Dante connections; Ensure speakers are connected correctly and powered.
Distorted audio	Input signal too high (clipping); Incorrect gain staging; Faulty cables.	Reduce input levels; Adjust gain settings in DSP software; Replace suspect cables.
AEC not working effectively	Improper AEC configuration; Microphone placement issues; Room acoustics.	Review and adjust AEC parameters in the software; Optimize microphone placement; Consider room acoustic treatment.
Cannot connect via USB/Ethernet	Driver issues; Incorrect IP settings; Firewall blocking connection; Faulty cable.	Install/update Kramer drivers; Verify network settings (IP address, subnet mask); Temporarily disable firewall; Try a different USB/Ethernet cable.

If the problem persists after attempting these solutions, contact Kramer technical support.

8. SPECIFICATIONS

Key technical specifications for the Kramer AFM-20DSP-AEC:

- **Model:** AFM-20DSP-AEC
- **Ports:** 20 configurable analog audio ports
- **DSP:** Multi-channel Digital Signal Processing
- **AEC:** Acoustic Echo Cancellation
- **Amplifier:** Built-in 2x60W @ 8Ω and 1x120W @ 70V / 100V power amplifier
- **Dante Interface:** 4x4 Dante channels
- **HDMI:** Audio embedding and de-embedding

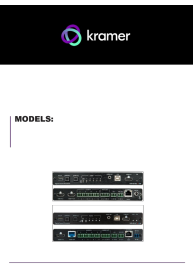


- **S/PDIF:** Digital audio input/output
- **USB:** Mini USB for control, USB PROG. for firmware
- **Control:** RS-232, Ethernet (Dante)
- **Sampling Rate:** Up to 96 kHz
- **Item Weight:** 7 pounds
- **Package Dimensions:** 17 x 9 x 2 inches
- **Manufacturer:** Kramer Electronics

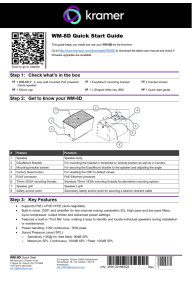
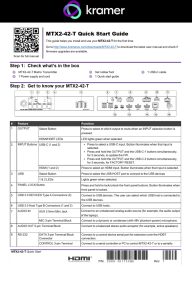
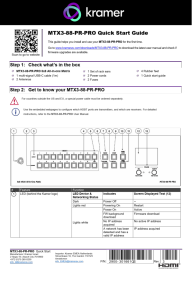
9. WARRANTY AND SUPPORT

Kramer Electronics provides a standard warranty for its products. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official Kramer website. For technical support, product registration, or service inquiries, please contact Kramer customer support through their official channels.
Kramer Website: www.kramerav.com

© 2023 Kramer Electronics. All rights reserved.

Related Documents - AFM-20DSP-AEC

	<p>Kramer DSP-62-AEC & DSP-62-UC Digital Sound Processor User Manual</p> <p>Comprehensive user manual for Kramer DSP-62-AEC and DSP-62-UC Digital Sound Processors. Learn about installation, connectivity, operation, audio processing, and technical specifications for professional AV environments.</p>
	<p>Kramer VS-62DT 6x2 UHD Matrix Switcher User Manual</p> <p>User manual for the Kramer VS-62DT, a 6x2 UHD Matrix Switcher with HDMI and HDBaseT outputs, featuring Power over Ethernet (PoE) capabilities. Learn about installation, operation, and technical specifications for professional AV environments.</p>
	<p>Kramer DSP-62-AEC Quick Start Guide: Installation and Operation</p> <p>A concise guide to installing and operating the Kramer DSP-62-AEC Digital Sound Processor, covering setup, connections, mounting, and basic operation via Ethernet and RS-232.</p>

	<p>Kramer WM-8D PoE Dante Speaker Quick Start Guide</p> <p>Quick start guide for installing and setting up the Kramer WM-8D, an 8-inch, 2-way wall-mounted PoE powered Dante speaker with built-in DSP, mixer, and amplifier. Learn about features, installation, and Dante networking.</p>
	<p>Kramer MTX2-42-T Quick Start Guide: Installation and Operation</p> <p>This quick start guide from Kramer details the installation and operation of the MTX2-42-T 4x2 4K USB-C/HDMI Matrix Transmitter, covering unboxing, port identification, mounting, connectivity, and basic operation.</p>
	<p>Kramer MTX3-88-PR-PRO 8x8 Matrix Switcher: Quick Start Guide</p> <p>Quickly set up and operate the Kramer MTX3-88-PR-PRO, an 8x8 All-in-one Matrix switcher designed for professional audio-video routing. This guide covers unboxing, initial connections, and basic operation.</p>