## Behringer CX3400

# Behringer Super-X Pro CX3400 Crossover User Manual

High-Precision Stereo 2-Way/3-Way/Mono 4-Way Crossover with Limiters

## 1. Product Overview

The Behringer Super-X Pro CX3400 is a high-precision stereo 2-way/3-way/mono 4-way crossover designed for professional audio applications. It features advanced Linkwitz-Riley filters, individual limiters, phase reverse switches, and a subsonic filter to optimize speaker performance and protect your system.

### Key Features:

- 24 dB/octave, state-variable Linkwitz-Riley filters for precise frequency separation.
- Absolutely flat summed amplitude response, zero phase difference.
- Individual limiter and phase reverse switch per output.
- Switchable 25 Hz subsonic filter per input for low-frequency driver protection.
- Switchable equalization for constant directivity horns.

## 2. Front Panel Controls

The front panel of the CX3400 provides intuitive controls for managing your audio signals. It features two main channels and a dedicated subwoofer section, allowing for flexible configuration.

Figure 1: Front view of the Behringer CX3400, showing all control knobs and switches for Channel 1, Subwoofer, Mode, and Channel 2.

### Controls:

- **Power Switch:** Turns the unit on or off.

- **Gain Knobs:** Adjust the input and output levels for each channel and the subwoofer.
- **Low Cut (40Hz) Switch:** Activates a 25 Hz subsonic filter to protect low-frequency drivers.
- **Crossover Frequency Knobs:** Set the frequency points where the audio signal is divided between different speaker ranges (e.g., low/high, low/mid, mid/high).
- **X-Over Freq Switch (x1/x10):** Multiplies the selected crossover frequency by 10 for extended range.
- **Mode Switch (Stereo/Mono, 2-Way/3-Way):** Selects between stereo 2-way, stereo 3-way, or mono 4-way operation.
- **Phase Invert Switches:** Reverses the phase of individual outputs to correct for acoustic phase issues.
- **Limiter Switches:** Activates the built-in limiters to prevent signal clipping and speaker damage.

## 3. Rear Panel Connections

The rear panel provides all necessary audio input and output connections, primarily using XLR connectors for balanced signal transmission.


Figure 2: Rear view of the Behringer CX3400, showing XLR inputs and outputs for Channel 1 and Channel 2, as well as the power input.

### Connections:

- **Input (XLR):** Balanced XLR inputs for Channel 1 and Channel 2, receiving the full-range audio signal from your mixer or source.
- **Low Out (XLR):** Balanced XLR outputs for low-frequency signals, typically connected to subwoofer amplifiers.
- **Mid Out (XLR):** Balanced XLR outputs for mid-range frequency signals (available in 3-way and 4-way mono modes).
- **High Out (XLR):** Balanced XLR outputs for high-frequency signals, typically connected to full-range speaker amplifiers.
- **Sub Out (XLR):** Dedicated balanced XLR output for summed subwoofer signals.
- **AC Input:** Standard IEC power connector for connecting the unit to mains power.

## 4. Setup Guide

Proper setup of your CX3400 is crucial for optimal audio performance. This section outlines the steps for connecting your crossover in a typical 2-way stereo configuration.

### 4.1. Basic 2-Way Stereo Setup:

1. **Connect Audio Source:** Connect the main outputs of your mixer or audio source to the INPUTs of Channel 1 and Channel 2 on the CX3400 using XLR cables.
2. **Connect Low-Frequency Amplifier:** Connect the LOW OUTs of Channel 1 and Channel 2 on the CX3400 to the inputs of your amplifier(s) driving your subwoofers or low-frequency speakers.

3. **Connect High-Frequency Amplifier:** Connect the HIGH OUTs of Channel 1 and Channel 2 on the CX3400 to the inputs of your amplifier(s) driving your full-range or high-frequency speakers.
4. **Power On:** Ensure all connections are secure. Power on your mixer, then the CX3400, and finally your amplifiers.

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Video 1: This video demonstrates the setup process for a similar crossover unit, including connecting amplifiers and a mixer. While not the exact Behringer CX3400, the principles of connecting a crossover to a sound system are applicable.

### 4.2. Mono 3-Way/4-Way Setup:

For mono 3-way or 4-way operation, press the MODE switch to 'MONO'. In this mode, the inputs are summed, and the outputs are reconfigured to provide separate low, mid, and high-frequency signals, plus an additional subwoofer output if selected. Refer to the rear panel labels for specific output assignments in mono mode.

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Video 2: This video provides an overview of a professional 2/3 way stereo/4 way mono crossover, illustrating its features and potential applications. It helps in understanding the different operational modes of a crossover.

## 5. Operating Instructions

Once your CX3400 is connected, fine-tuning the settings will optimize your sound system's performance.

### 5.1. Setting Crossover Frequencies:

1. **Initial Settings:** Start with all GAIN knobs at 0dB and crossover frequency knobs at a neutral position.
2. **Adjust Low/High Crossover:** For 2-way operation, use the LOW/HIGH X-OVER FREQ knob to set the division point between your low-frequency speakers (subwoofers) and high-frequency speakers (full-range). A common starting point is around 80-120 Hz for subwoofers.
3. **Adjust Mid/High Crossover (3-Way/4-Way):** In 3-way or 4-way mono modes, additional crossover frequency knobs will be active to separate mid-range and high-frequency signals.
4. **Use X-Over Freq Switch:** If you need to adjust frequencies outside the standard range, use the x1/x10 switch to multiply the knob's range.

### 5.2. Gain and Level Adjustment:

1. **Input Gain:** Adjust the INPUT GAIN for each channel to match the output level of your mixer. Avoid clipping (indicated by the CLIP LED).
2. **Output Gains:** Adjust the LOW OUTPUT, MID OUTPUT, and HIGH OUTPUT GAIN knobs to balance the volume levels of your different speaker components.
3. **Subwoofer Gain:** Use the SUBWOOFER GAIN knob to control the overall level of the subwoofer output.

### 5.3. Limiter and Phase Control:

- **Limiters:** Engage the LIMITER switches on each output to prevent signal peaks from distorting your speakers.
- **Phase Reverse:** Use the PHASE REVERSE switches if you encounter phase cancellation issues between speakers, which can result in a thin or weak sound.
- **Subsonic Filter:** Activate the 25 Hz SUBSONIC FILTER to remove extremely low, inaudible frequencies that can waste amplifier power and potentially damage subwoofers.

## 6. Maintenance

To ensure the longevity and reliable performance of your Behringer CX3400, follow these maintenance guidelines:

- **Cleaning:** Regularly wipe the unit with a soft, dry cloth. Avoid using abrasive cleaners or solvents.
- **Ventilation:** Ensure adequate airflow around the unit. Do not block ventilation openings.
- **Storage:** Store the unit in a cool, dry place away from direct sunlight and extreme temperatures.
- **Cable Inspection:** Periodically check all audio and power cables for damage or wear. Replace any faulty cables immediately.

## 7. Troubleshooting

If you encounter issues with your CX3400, refer to the following troubleshooting tips:

- **No Sound:**
  - Check all power connections and ensure the unit is turned on.
  - Verify all audio cables are correctly connected to inputs and outputs.
  - Ensure input and output gain knobs are not set to minimum.
  - Check the MODE switch setting (Stereo/Mono) matches your setup.
- **Distorted Sound:**
  - Reduce input or output gain levels to prevent clipping (if CLIP LEDs are active).
  - Ensure the correct crossover frequencies are set for your speakers.
  - Check for damaged cables or faulty connections.
- **Weak Bass/Lack of Low End:**
  - Check the LOW OUT gain level.
  - Verify the crossover frequency for low-frequency speakers is set appropriately.
  - Ensure the 25 Hz subsonic filter is not inadvertently engaged if you require frequencies below this point.
  - Check phase settings using the PHASE REVERSE switches.

## 8. Specifications

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|---|---|
| **Brand** | Behringer |
| **Model** | CX3400 |
| **Number of Channels** | 4 |
| **Item Weight** | 5.5 Pounds |
| **Connectivity Technology** | XLR |

| | |
|---|---|
| **Power Source** | Corded Electric |
| **Frequency Response** | 20 Hz - 20 kHz (typical) |
| **Output Connector Type** | XLR |
| **Audio Input** | XLR |
| **Noise Level** | 24 Decibels |

## 9. Warranty Information

For detailed warranty information regarding your Behringer CX3400, please refer to the official Behringer website:

http://www.music-group.com/warranty.aspx

## 10. Support

Should you require further assistance, have questions, or need technical support for your Behringer CX3400, please contact Behringer customer support through their official channels. Visit the Behringer website for contact information and support resources.