

MX700 Speaker Troubleshooting Functionality and Connectivity



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Introduction

This document describes the basic functionality of Cisco TelePresence MX700 speakers and basic speaker troubleshooting for Single and Dual Camera.

Functionality

MX700 Speaker Functionality

If people speak from a remote site, their voices are heard predominantly on the center speaker for both sides (the third speaker for the right and the left monitor).

With the current TelePresence Codec (TC) software (as of TC Version 7.3), the codecs in the MX700/800 systems use custom loudspeaker array processing in order to synthesize two logical (Left / Right) loudspeakers.

All loudspeakers are in use at lower frequencies, while at high frequencies, only one speaker is used per channel. For lower mid-range frequencies, the sound is distributed among a subset of the available loudspeakers. This behavior is completely defined by the codec software, so later upgrades to the behavior benefit all systems in the field.

Hence, the audio is not played through all of the speakers. Only a certain level of frequency is audible from different speakers. For example, if you play song from your PC connected to the codec, only the center speaker plays the song predominantly, whereas the others only play bass/music/low-frequency.

- The lower-frequency content is always played back on the bass drivers.
- Lower mid-range frequencies are distributed among multiple loudspeakers above the screens.

Troubleshoot

MX700 Speaker Connectivity

In order to verify the cable connections, complete these steps:

1. Verify that speakers are placed directly above the monitors and are covered with a white panel. If you remove the cover, you can see the speakers above both monitors.



2. Remove the first two cameras (next to the camera), and you will see these ports:



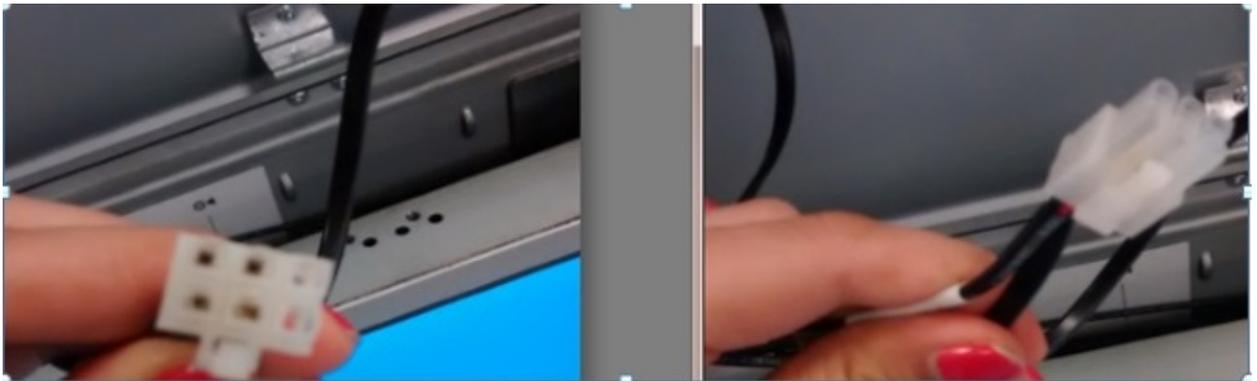
Here are the cables connected on Port 2 and 1 (marked in red in the previous image).



3. Verify that Port 2, which was marked previously, has this cable connected (three wires):



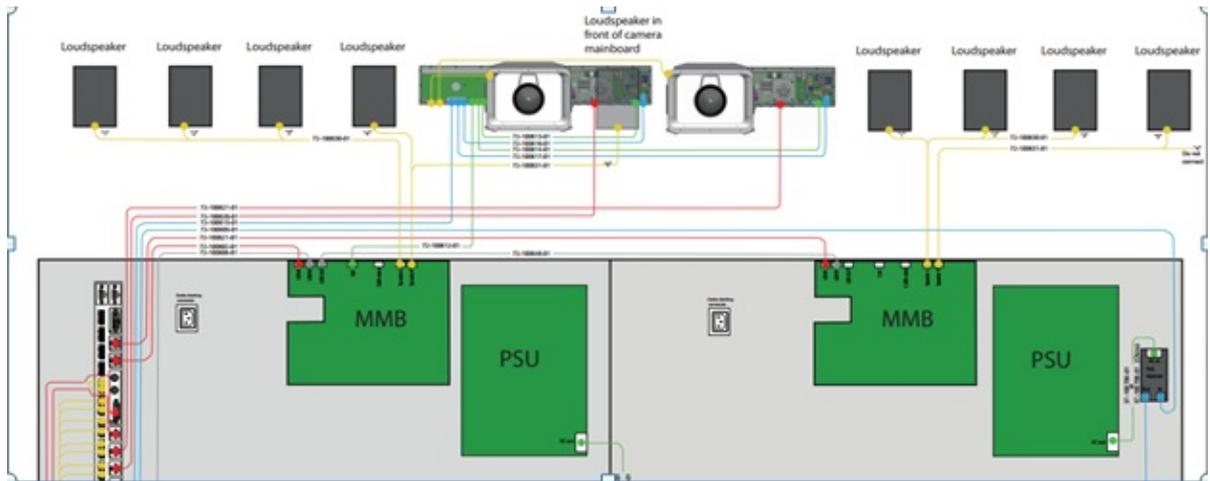
4. Verify that Port 1 has this cable connected to it (two wires):



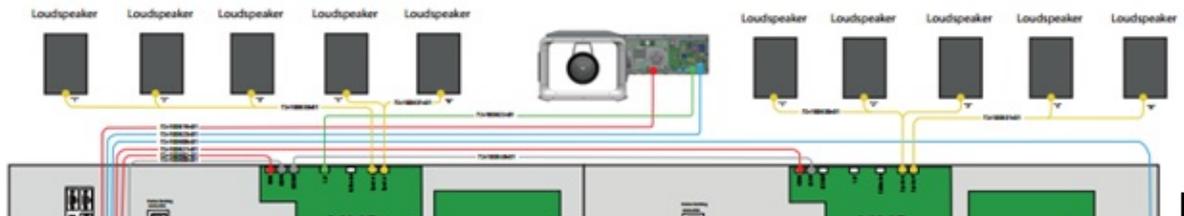
Note: Ensure that the cable connected to Port 2 is the one with three wires and the cable connected to Port 1 has two wires. If these two cables are swapped, the audio does not play out properly.

Dual-Camera Cabling (MX700 with Dual Camera)

For the speakers above the left monitor, the three left-most speakers should be connected to the port labelled 2 (shown previously), and the right two speakers should be connected to the port labelled 1. For the speakers above the right monitor, the first three speakers from the camera should be connected to (left to right) the port labelled 2 and the rest should be connected to port 1.



MX700 with Single Camera



Use the same connection with the MX700 codec with a single camera. Once the cables are verified, execute this command in order to test that the speakers function for TC Version 7.3 and later:

```
xcommand experimental audio speakercheck
```

After you execute the command from the CLI, you hear a sound from each speaker one-by-one (for a couple of seconds from each speaker in order to confirm the speaker's connection/functionality) and you receive this output:

```
OK
*r AudioSpeakerarrayResult Speaker 1 Detected: "No"
*r AudioSpeakerarrayResult Speaker 2 Detected: "Yes"
*r AudioSpeakerarrayResult Speaker 3 Detected: "No"
*r AudioSpeakerarrayResult Speaker 4 Detected: "Yes"
*r AudioSpeakerarrayResult Speaker 5 Detected: "No"
*r AudioSpeakerarrayResult Speaker 6 Detected: "No"
*r AudioSpeakerarrayResult Speaker 7 Detected: "No"
*r AudioSpeakerarrayResult Speaker 8 Detected: "No"
*r AudioSpeakerarrayResult Speaker 9 Detected: "No"
*r AudioSpeakerarrayResult Speaker 10 Detected: "No"
** end
```

The default measurement length is one second per loudspeaker. Ideally the output from the command should be "Yes" for all speakers, but false negatives might happen. If you increase the measurement length with the optional parameter Measurement Length, you can improve the robustness of the test.

