

Echo Issue Checklist

- **Identify which device is faulty: If you hear echo on your end, problem lies at far end and vice versa.**
- **Devices that support Echo Cancellation (C40/C60/C90):**
 - ✓ Check if the Echo cancellation is turned ON:
xConfiguration Audio Input Microphone X EchoControl Mode: On (X refers to the Microphone in use i.e 1,2,3,4)
xConfiguration Audio Input Microphone X EchoControl NoiseReduction: On
xConfiguration Audio Input Microphone X EchoControl Dereverberation: On
 - ✓ Decrease microphone levels to see if that reduces the echo :
xConfiguration Audio Input Microphone X Level: 15
 - ✓ Change the Microphone Type :
xConfiguration Audio Input Microphone X Type: Line
 - ✓ Make sure the Monitor is sending Analog audio instead of Digital audio to the speakers. This setting is present on the displays. Check and confirm with the customer.
 - ✓ Some consumer TVs also support advanced audio processing like “Virtual Surround” effects and “Dynamic Compression” to improve the TV experience. Such processing will make any acoustic echo canceller malfunction and should hence be switched off. If you use such a TV together with a C-series codec it is recommended that you turn off “Motion Flow”, “Natural Motion” or any other video processing that introduces additional delay.

IMPORTANT NOTE: Echo cancellation will not work if the output from the speakers takes more than 30ms to reach the microphone. If it reaches within 30ms, it would be detected by the codec and the codec will drop it, otherwise it will transmit it to far end which would result in echo. Due to this, the codec requires that the displays used with them are not processing video which might cause delay and make it greater than 30 ms.
 - ✓ There are two ways to overcome this delay. One way is to use Game Mode. Turning that to ON allow the video processing to decrease the delay on the displays hence making the communication real time. Another way is to increase the delay to which

the codec can accept echo cancellation outputs. A command has been introduced in TC5 which can increase this delay :

`xConfiguration Experimental Audio EcReferenceDelay: 50`

- **Other Devices**

- ✓ Check if you are using external speakers as well as speakers on the display. If you are using speakers on the display, turn them OFF :

`xConfiguration Audio Output HDMI 1 Mode: Off`

- ✓ Check the room setup and microphones being used. Unidirectional microphones take input from one direction however, Omnidirectional take input from all directions:



Unidirectional Microphone



Omnidirectional Microphone

- ✓ Try to swap the microphone ports to see if that changes the situation.
- ✓ At this point, swap the codec with any spare codec to see if that fixes the issue; if yes then the codec is faulty.