

APPLICATION NOTES

PRODUCTS SUPPORTED:
ClearOne CONVERGE® Pro 2 and
Cisco Telepresence Codecs (MX, SX, and IX)

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RESOLVING COMPATIBILITY PROBLEMS
BETWEEN DSP MIXERS
AND CISCO TELEPRESENCE CODECS (MX, SX, AND IX)

Overview

Cisco introduced a new feature called “Intelligent Proximity” in their Telepresence video conferencing codecs. The feature affects installed professional DSP mixers, due to the high-frequency signal that this proximity feature emits, which interferes with DSP functions like Acoustic Echo Cancellation (AEC) and other audio processing.

The Intelligent Proximity feature used to be disabled by default in Cisco’s previous releases. The integrators that install these Cisco codecs usually leave it at its default setting. Therefore, no audio problems related to this feature were observed in the past. Now, however, in the recent releases from Cisco, this feature is enabled by default, which is causing troubles with connected audio DSP products.

This application note describes the details about the Intelligent Proximity feature and how to resolve the associated audio problems.

Cisco Codec’s Intelligent Proximity Feature

Cisco’s Intelligent Proximity for Content Sharing allows users to automatically pair devices (smartphone, tablet, or laptop) with Cisco room-based video collaboration endpoints when they come within range. Once mobile phones and tablets are paired, users can control the video system remotely from their device, and can view content shared on the video endpoints on their mobile devices.

The proximity communications mechanism sends a high-frequency signal to the room, which is inaudible to a person, but audible to mobile devices running Cisco Proximity apps, making them aware of the Cisco Codecs in the local room.

For more information about this feature, see:

<http://www.cisco.com/c/en/us/products/collaboration-endpoints/intelligent-proximity.html>

In the local room, the Cisco codec delivers a mixture of far-end audio and the ultrasonic proximity signal. Even when the Codec is not being used for the conference, the ultrasonic proximity signal is still being delivered to the room.

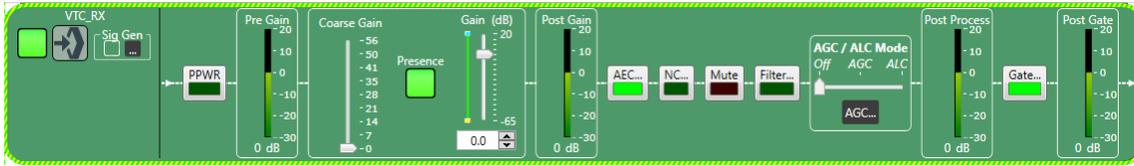
Also note that this feature is an experimental or trial feature in some of Cisco’s releases/models, and also has some issues. For more information about this, refer to:

<https://supportforums.cisco.com/document/12159326/troubleshooting-guide-cisco-proximity>

Problem with Installed Audio DSP Mixers and Proximity Signal

The high frequency signal used by Cisco’s Proximity feature disrupts installed professional audio solutions. This high-frequency audio signal can be detected by the CONVERGE Pro 2 DSP mixers, depending on the sensitivity of the microphones being used in the room, and can disrupt features such as Acoustic Echo Cancellation.

The following image shows the channel properties for a Mic/Line Input channel in the CONVERGE Pro 2 DSP mixer detecting the Proximity signal:



Notice that the signal meters show a signal at the 0dB level, even though no audible signal is present.

This high-frequency signal combined with proper far-end audio information results in the DSP not performing its audio processing properly. The proximity signal also impacts the ambient noise, which can cause inconsistencies in microphone gating. In short, this high-frequency signal used by the Intelligent Proximity feature is causing audio-related issues.

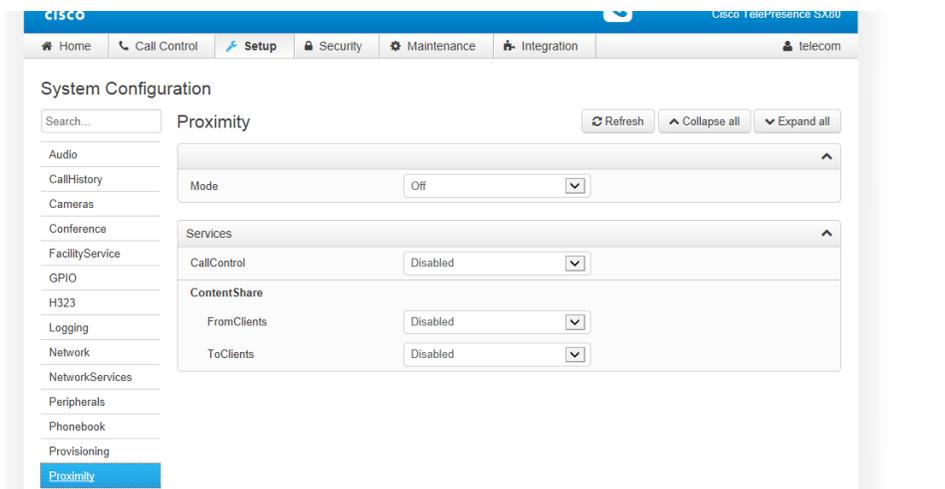
Solution

A simple solution that we recommend to avoid any audio issues due to this Proximity feature is to turn off this feature in the Cisco Telepresence Codecs, by following the steps below.

To turn off the Intelligent Proximity feature:

1. Open the System Configuration Tool for your Codec.
2. Select the **Setup** tab.
3. From the setup options at the right, select **Proximity**.

The Proximity screen appears:



4. Set the **Mode** to **Off**.

NOTE: The instructions provided are for the Cisco Telepresence SX80. The exact instructions for turning off the Proximity feature when using a different Cisco Telepresence Codec may vary. Consult your Cisco documentation for the details.

Summary

When using a Cisco Telepresence Codec integrated with an installed audio DSP mixer, we recommend disabling the Proximity feature in the codec configuration to avoid audio problems created by the ultrasound high-frequency signal it emits.

SALES AND INQUIRIES

Headquarters

5225 Wiley Post Way
Suite 500
Salt Lake City, UT 84116

US & Canada

Tel: 801.975.7200
TollFree: 800.945.7730
Fax: 801.303.5711

International

Tel: +1.801.975.7200
global@clearone.com

Sales

Tel: 801.975.7200
sales@clearone.com

TechSupport

Tel: 801.974.3760
tech.support@clearone.com