

The Power of Shared Resources

Conference Room Intergration in the
SoundStation VTX 1000™/VSX™ Environment

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Introduction

With the introduction of the ConferenceLink local infrastructure in its recent VSX 7000, VSX 8000, and SoundStation VTX 1000 video and voice conferencing systems ("The Distributed Dawn" Polycom Whitepaper), Polycom has enabled the next stage in deployment of The Polycom Office within the conference room environment.

The first implementation of such a system occurs in VTX Software Version 1.4 and VSX Software Version 7.0, which began shipping in July 2004. This paper discusses the major characteristics of this integration, and its relation to the overall concepts of ConferenceLink distributed integration, simplified conferencing, and improved performance.

Behavior of the Integrated System

Making available resources such as microphones, keypad, and processing power to all conferencing functions within the room satisfies a need that has been long apparent in the conference environment.

Microphones

Conference rooms with a conventional video system usually require two microphone systems: one for the videoconferencing system, and one for the speakerphone (Figure 1).

on the speakerphone. The video microphone may be pushed next to a projector fan exhaust during an audio meeting, for example, and this is not noticed for half an hour of painfully bad sound during the next video meeting. Or a particular talker may be sitting right next to the video microphone and think they're being heard fine on a speakerphone call, but they are fifteen feet from the audio microphone that's actually the one turned on. We are all familiar with these situations, and the time wasted in cautious "Okay, I am whispering into the other microphone now,

extra microphone modules that are usually associated with a separate videoconferencing system, but also takes advantage of the fact that the speakerphone is the device most often given the preferred central location on a conference table anyway. The SoundStation VTX 1000 EX microphones are also available to both systems, as is the auxiliary input in the SoundStation VTX 1000 interface module, often used for the Polycom wireless clip-on microphone during formal presentations and stage settings.

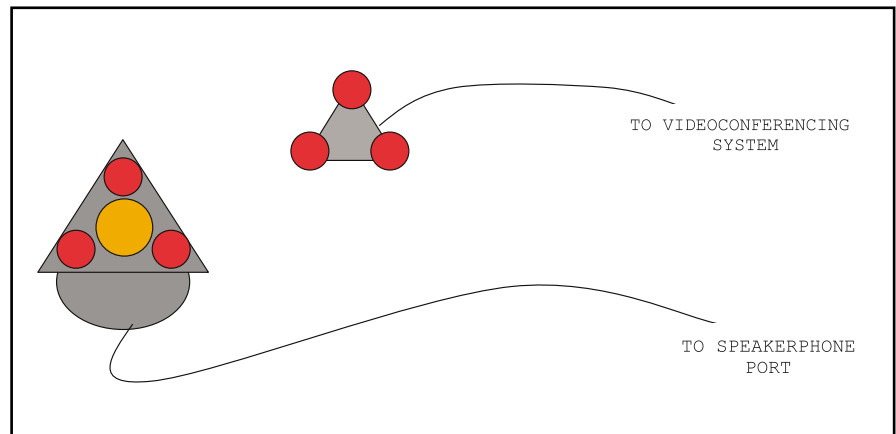


Figure 1. Duplicated three-element microphone units in conventional audio/videoconferencing environments

Speakers

In the integrated VTX-VSX system, speaker operation is determined by human interface considerations. When in a voice-only conference call, people expect the sound to come from the conference table device, and they also tend to talk to the same device. However, in a video conference, they perceive the far-end participants to be localized at the video display device, and so they expect the sound to come from there as well. Consequently, the integrated VTX-VSX system directs the loudspeaker audio according to the mode in which the system is being operated.

Call and System control

The LCD and keypad of the VTX console are two more functions that are available to both systems. The immediate benefit of this is that all calls can be placed from the same place, so the user does not have to swivel from controller to controller while placing successive calls. The console LCD displays the status of the ConferenceLink and of the Video call, in addition to its speakerphone functions. But one of the most exciting demonstrations of the power of the VTX-VSX distributed architecture is one-button call

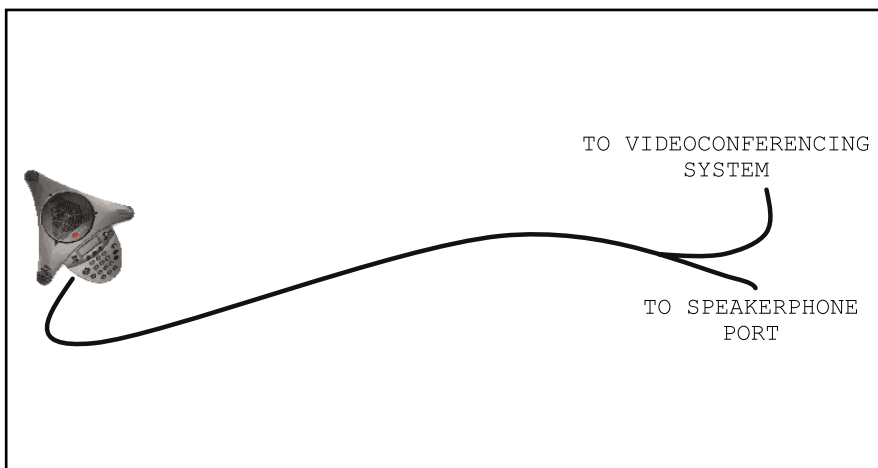


Figure 2. Microphone sharing in VTX-VSX integrated system

Not only does this take more space on the table and add another cable to the tabletop, but it usually means that people sound very different at the other end when they talk on the video system, as compared to when they are talking

can you hear me yet?" experimentation during an important meeting.

In the VTX-VSX Integrated system, a single set of microphones is shared among the systems (Figure 2). These are the high performance wideband microphones in the SoundStation VTX 1000 console. This eliminates the one or two

elevation: the ability to elevate a call from POTS telephony to video with a button press, yet without prior arrangement between the participants.

Adding Video to an Audio Call

It is not uncommon for participants in an audio call to decide that they want to change to a video connection. This is normally done by asking each other for their IP or ISDN connection numbers and any additional routing information, waiting while the other end figures out just what those numbers are, listening as the far end finally reads off that number, copying the number on a corner of a notebook or napkin, hanging up the speakerphone, and dialing the new call on the video number.

If they have copied it down correctly, the call may go through but if not, they call back on audio or cellphone and try to troubleshoot the problem. Or they may use a company directory and hope that the number has not changed, or that they have gotten the meeting room name right.

The VTX-VSX distributed architecture eliminates this entire process. The elevation to video is initiated from a button on the SoundStation VTX 1000 console. When the two participants are in a VTX Wideband speakerphone call, either can press the "Add Video" button that appears on their SoundStation VTX 1000, and the video systems automatically connect. Once connected, the SoundStation VTX 1000 POTS connection is automatically terminated, leaving a full video call established and the transition complete. This is much faster and simpler than the traditional method, and results in a lot of saved time and frustration. Its fast, accurate operation is a direct consequence of the unique VTX-VSX integration.

Let us suppose that a call is placed between the two SoundStation VTX 1000 conference phones. The users converse with VTX Wideband fidelity (7kHz over the standard POTS telephone line). Meanwhile, in the background, the SoundStation VTX 1000 phones exchange video dialing information over the data side channel in the VTX Wideband connection. Each phone knows the local video number by virtue of its Conferencelink connection to the VSX system. At some point the users decide that they want to elevate the conference from audio only to audio

plus video. One of the users presses the "Add Video" button on their console.

When a user presses the "Add Video" button during a POTS wideband call between SoundStation VTX 1000 units, several actions are initiated (Figure 3).

1. The initiating speakerphone (the one whose button was pressed) sends video dialing instructions to its attached VSX system.
2. The initiating VSX system calls the far-end VSX at the number it provided.

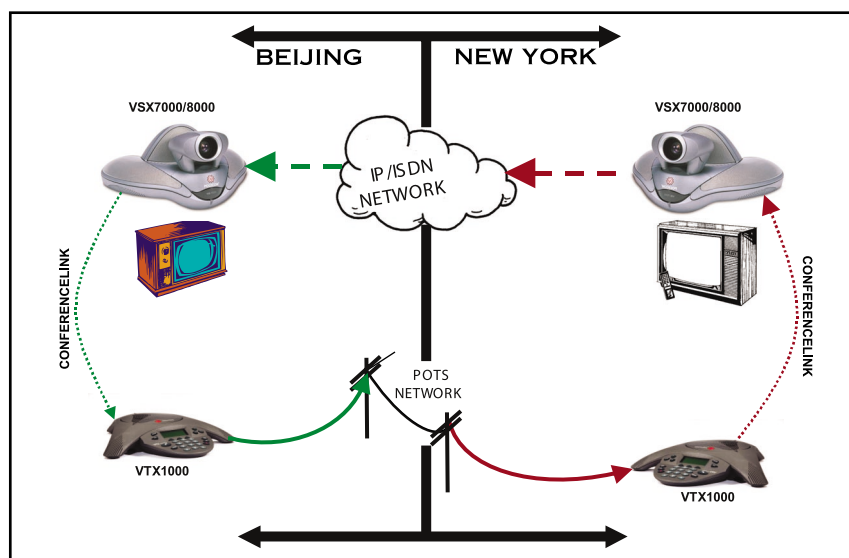


Figure 3. VTX-VSX one-button elevation to video with no pre-configuration

3. Once the video connection is established and verified, both VSX units instruct their SoundStation VTX 1000 conference phones, via Conferencelink, to hang up the analog calls.
4. Although the POTS line is now disconnected, the SoundStation VTX 1000 units continue to operate as audio resources, with microphones, speakers, LEDs, keypad, displays available for use. An add-on call can be dialed, for example, or the conference can be muted from the keypad.

Note that this sequence of operations is very similar to what would be done manually, with telephones, notepads, and perhaps secretaries. The differences are that the procedure occurs automatically, the critical information (the connection numbers) are automatically double-checked, and the audio connection is kept up

until the video connection is live and confirmed. The user's perception of this process, therefore, is nearly, and consistently, painless.

Other Shared Functions

In similar ways, most other functions of the SoundStation VTX 1000 console can be accessed via Conferencelink. The POTS telephone line interface, for example, is available for use when a video conference wishes to add an audio call for a multipoint connection. Further, this call can be added in VTX Wideband mode as well as narrowband mode, demonstrating shared use of

the SoundStation VTX 1000 processing engine by the VSX system.

Conversely, functions of the VSX 7000 can be shared by the SoundStation VTX 1000. We saw one example of this above: once the call is elevated to video, the video data stream is available to the SoundStation VTX 1000 for command and control functions, as needed. In another, the VSX 7000 subwoofer in a VTX-VSX integrated system is available to the SoundStation VTX 1000; it no longer requires its own subwoofer for low-frequency reinforcement.

Conclusion

This article has presented a description of the initial feature set harnessing the capabilities of the VTX-VSX integrated architecture. It is apparent that this new configuration concept is an immensely flexible one, and enables a large set of powerful new features to improve system performance and reliability, to simplify system operation, and to bring new functionality to the user. This is the latest demonstration of Polycom's continued effort to make remote conferencing as transparent and flexible as possible.

The Polycom Office™

With integrated video, audio, data, and Web capabilities, The Polycom Office is the only solution that offers an easy way to connect, conference, and collaborate any way you want. Work faster, smarter, and better with The Polycom Office.

Polycom, Inc. develops, manufactures and markets a full range of high-quality, easy-to-use and affordable voice and video communication endpoints, video management software, web collaboration software, multi-network gateways, and multi-point conferencing and network access solutions. Its fully integrated end-to-end solution, The Polycom Office, is supported by the Polycom accelerated communications architecture and enables business users to immediately realize the benefits of integrated video, voice data and web collaboration over rapidly growing converged networks.

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