



Telos VXs delivers the audio quality and flexibility Telos VX® Broadcast VoIP is known for, with all the added benefits of true virtualization for TV workflows.



## Telos® VXs Virtual VoIP System

Powerful and adaptable Voice over IP virtualized system for radio and live TV production.

**TV APPLICATION**



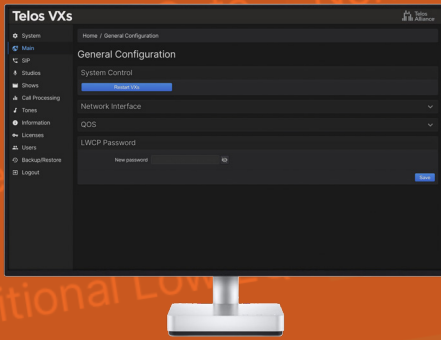
Route & Monitor with  
**Pathfinder**



Control with  
**Pathfinder**



**AES67  
Livewire+**



# Our Legendary Telos VX VoIP System. Now Virtual

## Powerful, Adaptable VoIP for Live TV

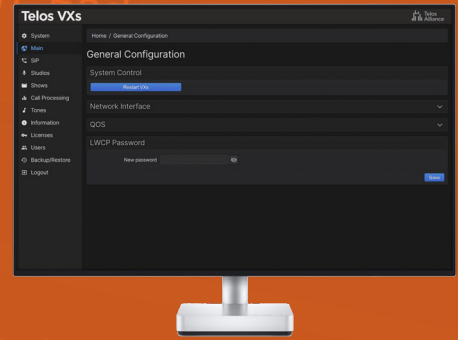
Telos Alliance first introduced broadcasters to the benefits of VoIP a decade ago, with our first VoIP phone system, Telos VX®. VX replaced racks of phone couplers, contribution hybrids, and engineering coordination lines with a single hardware VoIP Engine. Now, Telos VXs is here to help broadcasters reap the benefits of true virtualization as they adapt to changing broadcast workflows, all while making it easier for remote teams to tap into production and engineering partylines.

From remote IFBs to audience call-ins, VXs can run anywhere from one or two lines in a small studio to the on-air phones for your entire plant, giving you incredible operational power, adaptable workflows, and superior audio quality.

Production facility design is evolving, moving away from dedicated hardware connected to centralized router frames to flexible SMPTE 2110 media networks with software-based workflows. VXs software can be deployed on shared servers in the centralized data center or in cloud instances. These deployment options enable the benefits of true virtualization, such as easier facility-wide upgrades, automated deployment, and more, without site visits. Broadcasters can scale VXs in size from a single contribution audio line to a facility-wide IFB system to a multi-facility system, meeting the exact needs and budget of the facility now, with the ability to upgrade at any time with no penalty.

For decades, phone-based IFB and comms have been neglected in video production facilities. Instead of treating these critical communication paths as invisible background connections, VXs allows these assets to be brought to the forefront for detailed monitoring and control via customizable Pathfinder HTML-5 user panels for applications such as OB Truck to HQ Comms.

# Complete Workflow Flexibility



## Standards-Based for Easy Connectivity

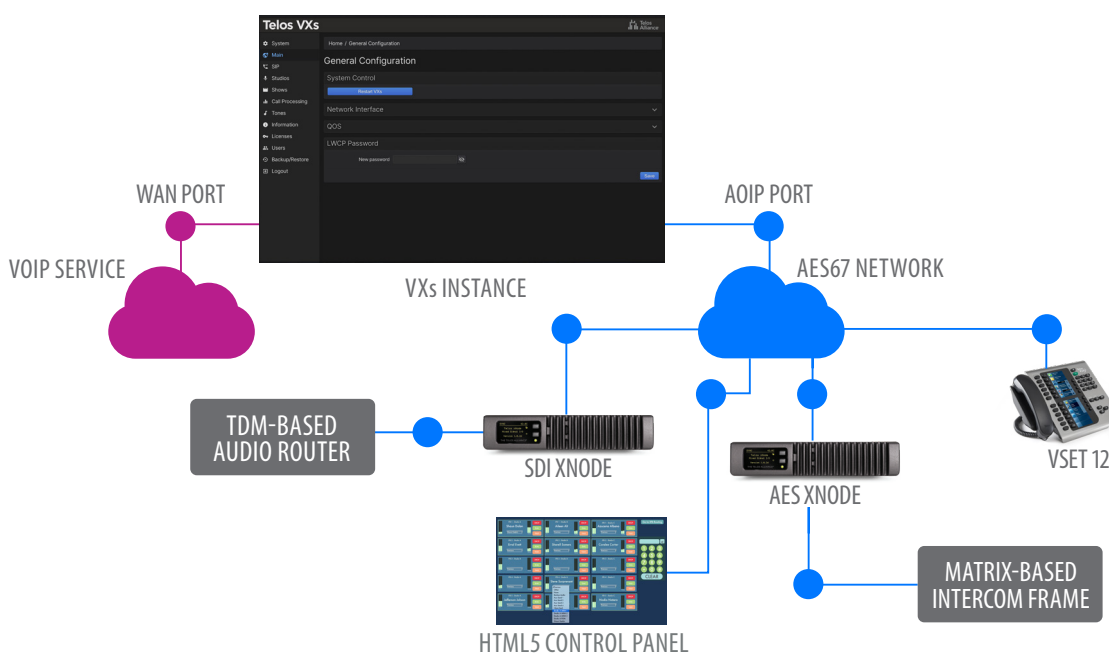
Support for SMPTE-2110 and AES67 environments brings a new level of compatibility and flexibility to VXs, allowing for direct integration with intercom systems, audio consoles, and other production systems over existing multicast media networks. Support for SAP advertisement means VXs smoothly integrates alongside AES67-enabled Dante® devices, as well.

When combined with the Telos Infinity® IP Intercom system, the drag-and-drop Infinity Dashboard interface allows remote IFBs and engineering coordination lines to be centrally configured, added to partylines and groups, and assigned to Infinity IP Intercom panels quickly.

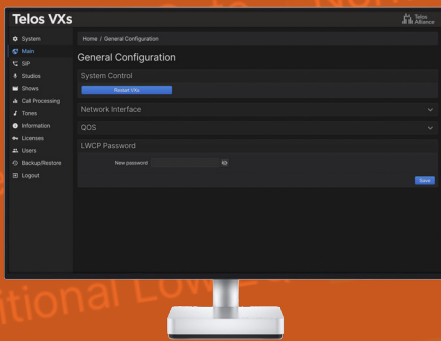
For those without an IP media infrastructure, Telos Alliance AoIP Audio Nodes provide high-density AES3, SDI, and analog I/O to integrate with any console or intercom system now while providing an upgrade path to direct AoIP connectivity as your facility evolves in the future.

## New-to-AoIP Installation

Don't have IP-Audio networking yet? VXs will work with all console and intercom brands, networked or not, using Telos Alliance Nodes with AES3, SDI, and analog I/O, as well as GPIO.



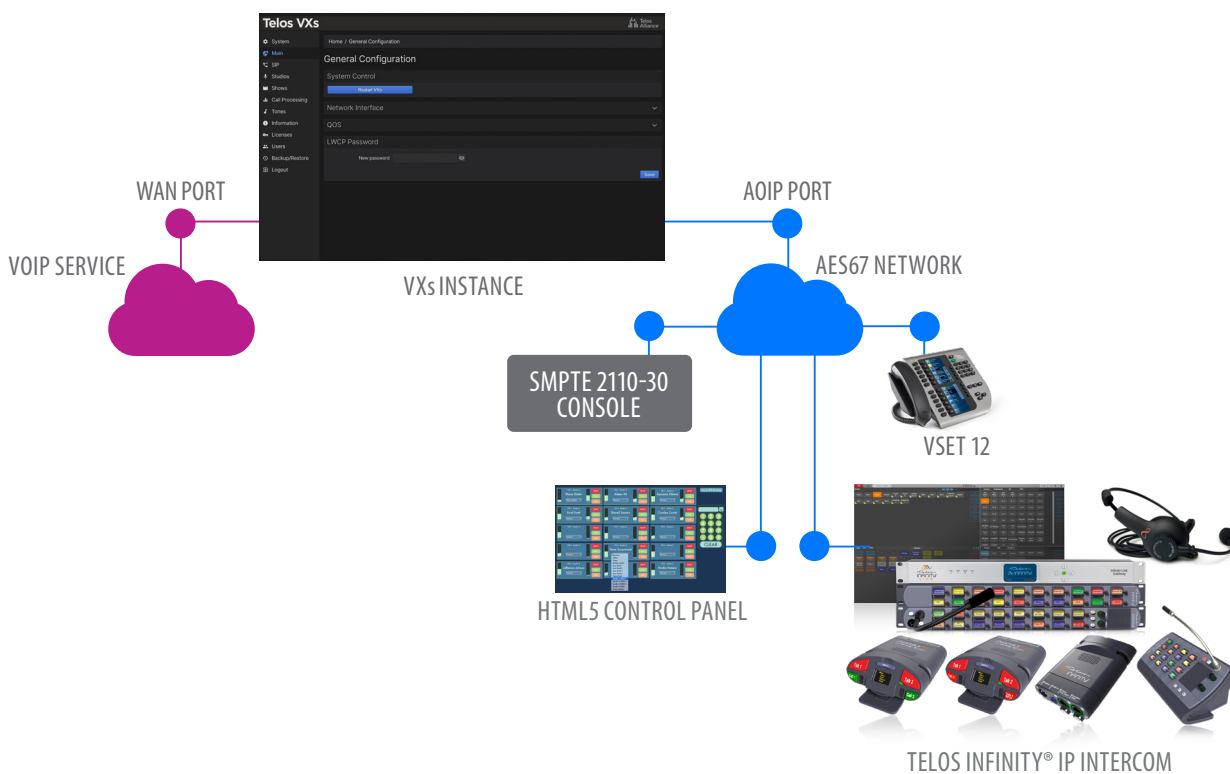
The diagram above shows an example system with a non-AoIP mixer and intercom system using a Telos Alliance AES xNode and SDI Node.



# Less Maintenance, Infrastructure, Space Required

## AoIP Installation

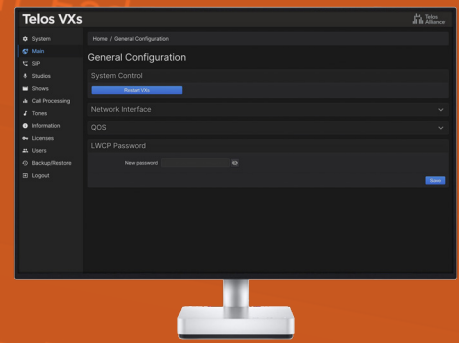
Support for Livewire+™ AES67, AES67, and SMPTE 2110-30 environments brings a new level of compatibility and flexibility to VoIP systems. Support for AES67 gives broadcasters the capability of integrating VXs into any AES67 environment or compatible SMPTE 2110-30 environments. Support for SAP advertisement means VXs smoothly integrates alongside AES67-enabled Dante® devices.



The diagram above shows an example system consisting of a Livewire+ audio console and Telos Infinity® IP Intercom.

For those wanting the benefits of a virtual VoIP phone system but with the simplicity of pre-configured hardware, a single VXs system with up to four channels, four AES instances, and twelve lines can be pre-installed on the Telos Alliance AP-3000 platform.

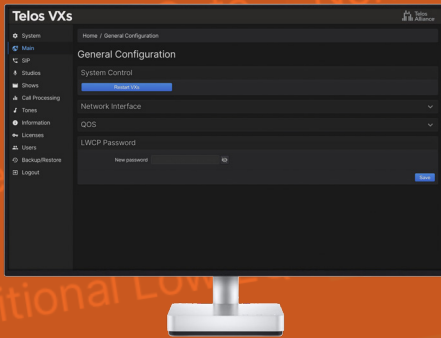
# Tap Into Production & Engineering Partylines



## HTML-5 Control



When combined with Axia® Pathfinder™ Core PRO Broadcast Controller, you can create touchscreen-friendly custom HTML-5 panels to monitor and control every aspect of the VXs system from any web browser. Comms managers and producers can use panels to manage all the IFB, contribution, and tech coordination lines in the facility. Gone are the days of reporters calling in to the wrong IFB and missing their live shot. With an HTML-5 control panel, producers can see the status and caller ID of each IFB line and even have the ability to call the reporter directly.



**Pay for Only What  
you Need**

## High-Performance Audio

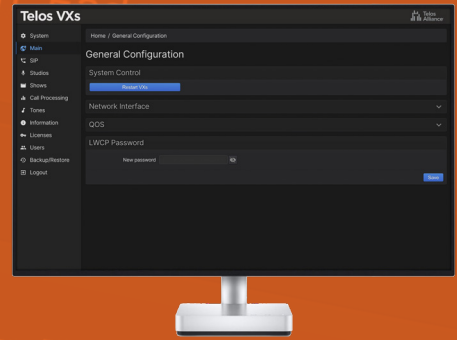
Every call gets 5th-generation audio processing, packed full of technology engineered to extract the cleanest, clearest caller audio from any phone line—even noisy cellular calls. VXs makes TV talents' in-ear and comms feeds more intelligible as well. It includes Smart AGC coupled with Telos' three-band adaptive Digital Dynamic EQ, a three-band adaptive spectral processor, noise gating, and Acoustic Echo Cancellation.

HD voice calls will benefit from VX's native support of the G.722 codec, instantly improving speech quality.

## **TelosCare™ PLUS**

We know that your VXs is just one piece of the telephony puzzle, which may include your VoIP provider, PBX vendor, IT team, network security team, and more. We love to leverage our combined centuries of telephony experience to serve as your trusted VoIP ninjas and help you complete and maintain your telephony puzzle for years to come. TelosCare™ PLUS gives you the one-stop service and support you need long after the sale, going far beyond basic support and troubleshooting with proactive, holistic service and membership perks.

# Unlimited Standby Instances Included



## Deployment Options

Broadcasters can deploy VXs on their servers in the rack room, on shared servers in the centralized data center, on the Telos Alliance AP-3000 hardware platform, or in cloud instances. This enables the added benefits of true virtualization, such as easier facility-wide upgrades, automated deployment, and more, without site visits.

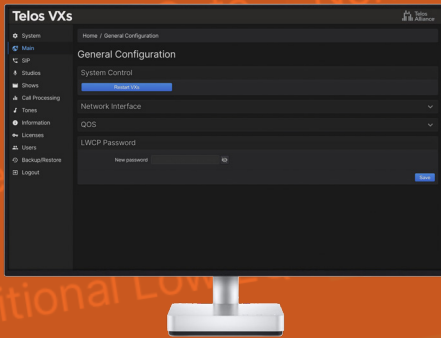
You can scale VXs in size from a single studio to a facility-wide IFB system to a multi-facility system. The system is built based on your specific needs by combining features as required: *Channels*, *Lines*, and *Acoustic Echo Cancellor* instances. These features combine into a license code, which can be active in one VXs instance at a time.

Features are tiered based on quantity to enable economic growth as overall system size increases. VXs features are available as a subscription, which includes the TelosCare PLUS Customer Care while the subscription is active. VXs features are also available as a one-time buyout, with the TelosCare PLUS included for the first year and optionally renewable yearly after that. The VXs Bill of Material Generation Tool makes BOM generation easy. Please visit [TelosAlliance.com/vxs-bom](https://TelosAlliance.com/vxs-bom) to access this tool.

## Pre-Sales Configuration

Pre-sales configuration assistance with a Telos Engineer is recommended before order placement. It's free and a great way to ensure the right system components are ordered, with a clear and workable system design. These calls are arranged through your Telos salesperson or dealer and can also include your IT and telecom professionals or vendors.





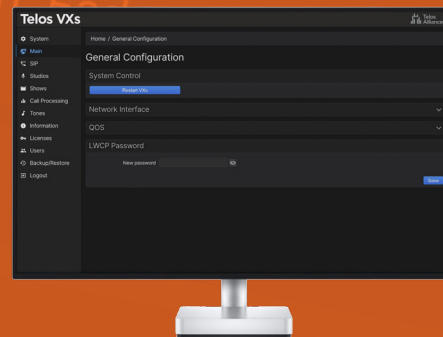
# Deploy on Your Servers, Shared Servers, Data Center, or in the Cloud

## Telos VXs VoIP System for Television Features

- Provides unmatched call-handling capabilities for IFB, engineering coordination, and contribution audio.
- Scalable to serve a single control room, and entire production facility, or even multiple facilities simultaneously.
- Includes support for AES67, giving broadcasters added flexibility of integrating VXs into any AES67 network and compatible SMPTE 2110-30 networks in addition to Livewire networks, plus support for SMPTE ST 2022-7.
- HTML-5 control via Pathfinder Core PRO.
- SIP call-handling throughout—no internal conversion to analog call handling like some other so-called “VoIP” systems.
- Works directly with hosted VoIP or PBX services, and in conjunction with a PBX may support POTS, T1/E1, and ISDN BRI for maximum flexibility and cost savings.\*
- Standards-based SIP interface integrates with all modern VoIP-based PBX systems to allow transfers, line-sharing, caller ID, and common telco services for business and studio phones.
- Standard Ethernet backbone provides a common transport path for both studio audio and telecom needs, resulting in cost savings and simplified studio infrastructure. Connection to hundreds of control devices (software or hardware) is possible.
- Each call receives a dedicated processing path for unmatched clarity and superior conferencing.
- Native Livewire® integration: One connection integrates caller audio, program-on-hold, mix-minus, and logic directly into Axia® AoIP consoles and networks.
- Connect VXs to any console, intercom, or other broadcast equipment using available Telos Alliance AES/EBU, SDI, Mixed Signal, and GPIO nodes. Audio interfaces feature 48 kHz sampling rate and studio-grade 24-bit A/D converters with 256x oversampling.
- Powerful dynamic line management enables instant reallocation of call-in lines to studios requiring increased capacity.
- VSet Call Controllers™ with full-color LCD displays and Telos Status Symbols™ present producers and talent with a rich graphical information display. Each VSet features its own address book and call log.
- Clear, clean caller audio from 5th-generation Telos Adaptive Telephony technology, including Digital Dynamic EQ, AGC, adjustable caller ducking, and audio dynamics processing by Omnia®.



# Configure on Familiar Devices



- Wideband acoustic echo cancellation eliminates open-speaker feedback.
- Support for the G.722 codec enables high-fidelity phone calls from iPhone and Android SIP softphones using a SIP server.

*\*Due to the wide variation in how traditional phone service can be delivered and the complexities involved in converting those services to SIP, we want to talk with you about your system design before you order. Telos has VX System engineers standing by to help you draw up a configuration that will ensure your VX purchase will perform to your expectations when using legacy telephony circuits.*

## Specifications

The first step to deploying VXs is ensuring you are using a compliant platform. A machine with the following specs can, at minimum, handle 64 simultaneous calls on-air, on handset, on hold, or any combination of the three:

Required	Item	Description
✓	≥ 3 GHz CPU	Four cores
✓	RAM	2 GB
✓	OCI Runtime	Container runtime, such as docker engine
✓	Internet	Used for product activation
✓	PTP4L	Additional container for time sync (or system time otherwise synced to PTP)
✓	Quay Account	Need to access VXs container

For those wanting the benefits of a virtual VoIP phone system but with the simplicity of pre-configured hardware, a single VXs system with up to four channels, four AES instances, and twelve lines can be pre-installed on the Telos Alliance AP-3000 platform. Telos Alliance is happy to consult with you on your system design to determine your specific use case's appropriate specifications.