Telos VX® Duo

Legendary Telos VX performance and features in a compact, silent platform.



Telos VX Duo Broadcast Phone System

Delivering broadcast VoIP at a breakthrough price.





Big performance, small package

Overview

Big performance in a small, silent, affordable package

For over a decade, Telos VX broadcast phone systems have been the industry standard for bringing phone calls into any broadcast facility. VX Duo brings the same audio performance and user experience you'll find in our flagship VX Enterprise system to a compact, completely silent platform. This makes VX Duo an ideal choice for home and project studios and stations where all equipment is located inside a control room. The affordability of VX Duo puts the legendary performance of Telos VX within reach of any budget.

Duo is an expandable two hybrid/channel VX system

VX Duo comes with two hybrids/channels which can either be used for a single studio (two separate caller faders on the board) or split between two studios, such as an AM/FM combo, or a control room and production studio.

Need more channels? No problem! VX Duo is expandable in increments of 2 channels, making a 4, 6, or 8-channel system a simple matter of adding licenses as needed.

AES67 Support

VX Duo includes support for Livewire+ AES67, giving broadcasters the flexibility to integrate it into any Livewire or AES67 facility.

Pathfinder control and support

Build HTML5 control panels for VX Duo using our Axia Pathfinder Core Pro Broadcast Controller.

Pure digital call-handling throughout

Unlike some other "VoIP" systems, there are no analog stages in VX Duo, ensuring you always get the highest possible call audio quality.

Includes 2 channels, expandable to 8 channels



Features

- Delivers the same user experience and audio performance of our flagship phone system
- Comes with 2 channels/hybrids standard
- Expandable to a total of 8 channels/hybrids via additional 2 channel expansion licenses
- Includes smart AGC and our famous three-band adaptive digital dynamic EQ, a three-band adaptive spectral processor, and noise gating
- Includes wideband acoustic echo cancellation to eliminate feedback and allow natural conversations with callers when monitoring on open speakers
- Compact, fanless, and completely silent, allowing for in-studio installation
- Up to 3 units can be positioned side by side in a single rack space
- Works with all Telos VSet call controllers and VX-compatible call screening software

In Depth

With a capacity for up to 8 channels (hybrids/faders), Telos VX Duo is an appliance-based system that is ideal for small- to medium-sized facilities.

- Base system is licensed for 2 channels, and can be expanded up to 8 channels total by adding additional 2 channel licenses
- Supports an unlimited number of SIP extensions
- Maximum simultaneous on-air calls: 96
- Maximum on-air calls that can be conferenced on one fader: 12

VX System Components

VX Duo is a small form factor appliance with two gigabit Ethernet ports. It is completely silent, making it ideal for deployment inside studios.

You'll notice there are no audio I/O or telco ports on VX Duo itself. That's because all I/O is interfaced via Ethernet. The AoIP network supports a wide variety of Axia audio consoles, AES67 audio devices, Telos VSet phones, console-integrated call controllers, and more. VoIP services connect through a dedicated WAN interface, which can also accept connections from VSet phones, console call controllers, and more.



Easy configuration even if you're new to VoIP

No VoIP experience? No problem!

Telos now provides easy, step-by-step configuration instructions for high-quality cloud VoIP providers. These guides can help you get up and running quickly, and are available at https://support.telosalliance.com/article/nx0wtz8xnm-configuring-vx-for-use-with-clearly-ip-clearly-cloud

Specifications

Analog Inputs (with Telos Alliance xNode)

- Input Impedance: >40 k Ohms, balanced
- Nominal Level Range: Selectable, +4 dBu or -10dBv
- Input Headroom: 20 dB above nominal input

Analog Outputs (with Telos Alliance xNode)

- Output Source Impedance: <50 Ohms balanced
- Output Load Impedance: 600 Ohms, minimum
- Nominal Output Level: +4 dBu
- Maximum Output Level: +24 dBu

Digital Audio Inputs and Outputs (with Telos Alliance xNode)

- Reference Level: +4 dBu (-20 dB FSD)
- Impedance: 110 Ohm, balanced (XLR)
- Signal Format: AES-3 (AES/EBU)
- AES-3 Input Compliance: 24-bit with selectable sample rate conversion, 32 kHz to 96kHz input sample rate capable
- AES-3 Output Compliance: 24-bit Digital Reference: Internal (network timebase) or external reference 48 kHz, +/- 2 ppm
- Internal Sampling Rate: 48 kHz
- Output Sample Rate: 44.1 kHz or 48 kHz
- A/D Conversions: 24-bit, Delta-Sigma, 256x oversampling
- D/A Conversions: 24-bit, Delta-Sigma, 256x oversampling
- Latency <3 ms, mic in to monitor out, including network and processor loop

No-compromise call quality



Frequency Response (with Telos Alliance xNode)

- Any input to any output: +0.5 / -0.5 dB, 20 Hz to 20 kHz

Dynamic Range (with Telos Alliance xNode)

- Analog Input to Analog Output: 102 dB referenced to 0 dBFS, 105 dB “A” weighted to 0 dBF
- Analog Input to Digital Output: 105 dB referenced to 0 dBFS
- Digital Input to Analog Output: 103 dB referenced to 0 dBFS, 106 dB “A” weighted
- Digital Input to Digital Output: 138 dB

Total Harmonic Distortion + Noise (with Telos Alliance xNode)

- Analog Input to Analog Output: <0.008%, 1 kHz, +18 dBu input, +18 dBu output
- Digital Input to Digital Output: <0.0003%, 1 kHz, -20 dBFS
- Digital Input to Analog Output: <0.005%, 1 kHz, -6 dBFS input, +18 dBu output

Crosstalk Isolation, Stereo Separation, and CMRR (with Telos Alliance xNode)

- Analog Line channel to channel isolation: 90 dB isolation minimum, 20 Hz to 20 kHz
- Analog Line Stereo separation: 85 dB isolation minimum, 20 Hz to 20 kHz
- Analog Line Input CMRR: >60 dB, 20 Hz to 20 kHz

IP/Ethernet Connections

- (1) Gigabit Ethernet via RJ-45 LAN connection (AoIP)
- (1) Gigabit Ethernet via RJ-45 WAN connection (VoIP)



The same features as our enterprise-scale solutions

Processing Functions

- All processing is performed at 32-bit floating-point resolution
- Send AGC/limiter
- Send filter
- Gated receive AGC
- Receive filter
- Receive dynamic EQ
- Ducker
- Sample rate converter
- Acoustic Echo Canceller

Power Supply

- 100-240 VAC input 50-60 Hz external power supply with 12VDC, 3.33A output

Operating Temperatures

- -10 degree C to +40 degree C, <90% humidity, no condensation

Studio Audio Connections

- Via Livewire IP/Ethernet. Each channel (hybrid) has one input and one output
- Each studio has a Program-on-Hold input
- Each Acoustic Echo Canceller has two inputs (signal and reference) and one output
- Livewire+™ AES67 equipped studios may take and supply audio directly to/from the network. Telos Alliance xNodes are available for analog and AES3 breakout.
- VX Duo supports AES67 connectivity. AES67 stream parameters:
  - (2) channels per stream, 1 ms packetization rate
  - Sample rate: 48 kHz
  - Payload type: 96
  - Source port: 5001
  - Destination port: configurable
  - Time to live (TTL): configurable (1-255)
  - IEEE 802.1p priority code point (PCP): configurable (0-7)
  - IEEE 802.1Q VLAN tag: configurable (0-4094)

Native support for Livewire+ AES67 AoIP



- DiffServ code point (DSCP): configurable (0-63)
- Don't Frag (DF) bit: configurable (true/false)
- Receive buffer size: configurable (2000-20000 µs)

- VX supports PTPv2 (IEEE 1588-2008) clocking. Domain, sync interval, announce interval, announce timeout, and many other parameters are all configurable.

Telco Connections

- Audio: standard RTP. Codecs: g.711µ-Law and A-Law, and G.722
- Control: standard SIP endpoint. ISDN PRI/T-1, ISDN BRI, and POTS may be supported with the appropriate interfaces using an existing PBX or an Asterisk-based PBX optionally configured by Telos Alliance.

Dimensions

- Compact desktop hardware platform
- 1.65" H x 5" W x 5" D (42 x 127 x 127 mm)

Regulatory

- North America: FCC and CE tested and compliant, external power supply is UL approved
- Europe: Complies with the European Union Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), as amended by Commission Decisions 2005/618/EC, 2005/717/ EC, 2005/747/EC (RoHS Directive), and WEEE.

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