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THE CLEANEST, MOST CONSISTENT CALL QUALITY EVER

SETTING NEW STANDARDS FOR STUDIO TELEPHONE SYSTEMS

Find a radio facility where caller audio quality is important, and chances are you'll also find a Telos Nx Talkshow System. Nx12 twelve-line and Nx6 six-line systems are the latest generation of Telos broadcast phone systems, built to deliver the cleanest, most consistent call quality possible from even the most challenging calls.

Nx systems combine multiple advanced telephone hybrids (each with their own AGC, noise gate, and caller override dynamics) with Telos' famous Digital Dynamic EQ, a sophisticated multi-band equalizer which analyzes and adjusts received audio spectral characteristics so that calls sound smooth and consistent despite today's wide variety of phone sets and connection types.

But there's more: Nx systems feature caller audio sweetening by Omnia, special echo cancellation to tame tricky VoIP and cellular calls, and anti-feedback routines to tackle the acoustic feedback that plagues open speaker applications.



Telos Nx6

Telos Nx6 and Nx12 systems can be ordered to work with your choice of POTS or ISDN (BRI) phone lines, and work with a variety of control surfaces, including the Telos Desktop Director, Call Controller and Console Director drop-in module. Of course, there's also an Ethernet connection for use with Telos Assistant Producer call screening software (and one-click connection to Axia IP-Audio networks).

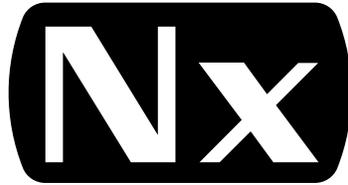
With Nx Talkshow Systems, talent and producers both benefit from unique Telos features that help make shows run smoother, faster and more error-free, such as our exclusive Status Symbol visual call management icons that clearly show line and caller status. Both Nx6 and Nx12 can power as many as 4 control surfaces, or up to 8 surfaces using accessory power supplies.

Nx6 works with up to 6 telephone lines; Nx12 works with up to 12 lines. Both have four hybrids for extra flexibility in fast-paced talk environments. Nx6 and Nx12 feature a unique dual studio mode that allows a single system to power two studios simultaneously, analog and Livewire I/O, Program-On-Hold inputs; Nx12 can also be outfitted with an optional AES interface that allows direct access to all four hybrids individually.

Naturally, Nx Talkshow Systems connect directly to Axia IP-Audio networks using a single CAT-5 cable. One connection takes care of all audio I/O, on-hold inputs, hybrid control and GPIO. Drop-in modules available for Axia Element consoles let users easily take control of their Nx6 or Nx12 system right from the console. Choose the 2-Fader+Phone module with onboard hybrid controls with Status Symbol displays, or the 4-Phone module for a fader-per-hybrid European operating style.



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Telos Nx12

Connections and Features

Nx6

- | | |
|-------------------------------|---|
| Incoming Line Capacity | <ul style="list-style-type: none">• (3) ISDN BRI (S₀ or U₀), or• (6) Analog |
| Hybrids | <ul style="list-style-type: none">• (4) High Performance, Digital• Dedicate all (4) to one studio, or (2) each to (2) studios |
| Audio Interfaces | <ul style="list-style-type: none">• Analog• Livewire Audio-over-IP• AES (optional)* |
| Control | <ul style="list-style-type: none">• Up to (8) Desktop Directors, Call Controllers, or Console Directors• Computer Controlled (ex. Telos' Assistant Producer Call Screening Application) via Ethernet |

Nx12

- | |
|---|
| <ul style="list-style-type: none">• (6) ISDN BRI (S₀ or U₀), or• (12) Analog |
| <ul style="list-style-type: none">• (4) High Performance, Digital• Dedicate all (4) to one studio, or (2) each to (2) studios |
| <ul style="list-style-type: none">• Analog• Livewire Audio-over-IP• AES (optional)* |
| <ul style="list-style-type: none">• Up to (8) Desktop Directors, Call Controllers, or Console Directors• Computer Controlled (ex. Telos' Assistant Producer Call Screening Application) via Ethernet |

*Requires optional daughter board to repurpose XLR connections for AES.

Features

- Our most advanced hybrid algorithms.
- New symmetrical wide-range AGC and noise gate by Omnia.
- Studio adaptation and pitch shifter help prevent feedback in situations where open speakers are required.
- Adjustable caller override improves performance and allows you to individualize the degree to which the announcer ducks the caller audio.
- Digital Dynamic EQ and adjustable smart-level AGC by Omnia keeps audio spectrally consistent from call to call.
- Caller ID on both analog POTS and ISDN telephone lines, accessible over the Ethernet for call screening applications.
- Many control options to suit your individual requirements, both desktop and console-mounted.
- Status Symbols make life easier for producers and talent with their animated high-contrast icon display of line status.
- Input/output via analog XLR or Livewire Audio-over-IP. Optional AES3 I/O module.
- POTS, ISDN-S, or ISDN-U (specify when ordering) - Nx12 supports 50-50 mixed configurations.
- Two-studio mode for sharing one Nx and its telephone lines with two studios.
- When coupled with an Axia Element console, integrated control is possible using the Element's Call Control or Europhone Fader modules.
- Web server for configuration and remote monitoring.
- Flexible metering.
- Call Screening and remote control using Telos' Assistant Producer, or a wide variety of third party software packages.
- Function buttons and GPIO-style outputs for control of delay systems and recorders.





Specifications

Processing Functions

- | | |
|---|--|
| General | <ul style="list-style-type: none">• Telos 3rd-generation Adaptive Digital Hybrids• Telos Exclusive Feedback Reduction Functions, including Acoustic Echo Cancellation |
| Send (to caller) Processing | <ul style="list-style-type: none">• Sample Rate Conversion• High-pass Filter• Studio side echo cancellation• Frequency Shifter• AGC/Limiter• Pgm-on-hold AGC/Limiter |
| Receive (from caller) Processing | <ul style="list-style-type: none">• High-pass 'Hum' Filter• Phone line echo cancellation• Noise Gate• Smart AGC/Platform Leveler• Telos' DDEQ (Digital Dynamic Equalization) 3-band Adaptive Spectral Processor• Sample Rate Conversion |

Analog Inputs

- | | |
|--------------------------------------|---|
| Send Analog Inputs | 2x |
| Program-on-Hold Analog Inputs | 2x |
| Connector | XLR Female, Pin 2 High (Active Balanced with RF Protection) |
| Input Level | Adjustable from -7 to +8 dBu (nominal) |
| Analog Clip Point | +21 dBu |
| Impedance | Bridging, > 10K Ohms |
| ADC Resolution | 20 bits |

Analog Outputs

- | | |
|---------------------------------|--|
| Receive Analog Outputs | 2x |
| Connector | XLR Male, Pin 3 High |
| Output Level | Adjustable from -7 to +8 dBu (nominal) |
| Impedance | <50 ohms |
| DAC Resolution | 24 bits |
| Headroom Before Clipping | 20 dB headroom from 4 DBU nominal levels |

AES Digital Input/Output (Option)

- | | |
|------------------------|--|
| Overview | Plug-in module converts the XLR inputs and outputs to AES3, providing 2x in on two XLR-Fs and 2x out on two XLR-Ms. The Nx12 provides 4x in on two XLR-Fs and 4x out on two XLR-Ms by using both channels of AES signal. |
| Rate Conversion | Sample Rate Converters on all inputs and outputs. Inputs can accept 32, 44.1, and 48 kHz rates. Clock for outputs may be sourced from the AES inputs or internally-generated, locked to the ISDN network. |
| Input Level | Adjustable from -27 to -12 dBfs |
| Output Level | Adjustable from -27 to -12 dBfs |

Audio Performance

- | | |
|---------------------------|---|
| Frequency Response | ±5 dB, 50 to 20 kHz (swept sine procedure, measured from analog input to output with unit in loop-back mode). |
| THD+N/Input | < 0.06% typical (measured at +18 dBu @ 1 kHz, analog in to analog out in loop-back test mode). |



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Nx12 Package

Switching Matrix and Conferencing

	Nx6	Nx12
Audio Routing and Switch Telephone Lines	All Digital 6	All Digital 12
Hybrids	4	4
Studio Inputs	4	4
Studio Outputs	4	4
Program-on-hold	2	2

Control Ports

Ethernet 100Base-T

- Web server for configuration and software update
- Telnet for command line control and diagnostics
- Assistant Producer server allows up to 8 instances of Telos Assistant Producer (v3.5 or later) to connect simultaneously

General purpose Input/Output

The Nx6 has two 9 pin D-sub, the Nx12 has one 15 pin, with status outputs and control inputs.

ISDN Telephone Connectivity

Protocol Compatibility

- National ISDN 1 and 2
- DMS-100 Custom Function
- AT&T 5ESS Custom Point-to-Point
- Euro-ISDN conforming to the Net 3/ETS300 Protocol

Interface

- USA & Canada: Integrated NT1 for direct connection to ISDN line via the two-wire U-interface (6-position/2-pin RJ-11 connector) 2B1Q Line Encoding
- Worldwide: 4-wire S-interface (8-position/8-pin RJ-45 Connector)

Telephone Coding Modes

- μ Law (ISDN Proto set to Natl I-1, AT&T Custom, Q.931 mu or DMS Custom)
- A-Law (ISDN Proto set to ETS-300)

Analog Telephone Line Connectivity

- Universal interface for worldwide application
- Programmable loop current
- Programmable ring and disconnect signaling (loop drop or tone)
- Programmable Flash time
- Caller ID decoding using Bellcore 212 modem standard

Desktop Director Ports

- Eight directors using external RJ-45 splitters and power. (Extended Desktop Directors count as 2 for power purposes)

