



SYSTEM DESIGN GUIDE

PoE+ AMPLIFIERS

Tesira™

Ethernet ports are a ubiquitous aspect of business today. Typically found in every private office, cubicle, and meeting room, port count can quickly run into the hundreds depending on headcount. Thus, an important aspect of all local area network (LAN) design is cost per network (switch) port. This cost includes the installation as well as the effort involved to provision it with an IP address, establish QoS settings, implement security measures to protect the network, and more.

While moving AV products onto the network provides a number of advantages, cost per network port is not often a key consideration for the integrator. Yet it can easily introduce a hidden installation cost of several hundred dollars per port. Even when using a separate network for AV devices, provisioning and monitoring each port are a significant concern to IT managers, especially for organizations that contract their IT support. Robust AV solutions like Tesira balance port count and cost with the ability to proxy devices.

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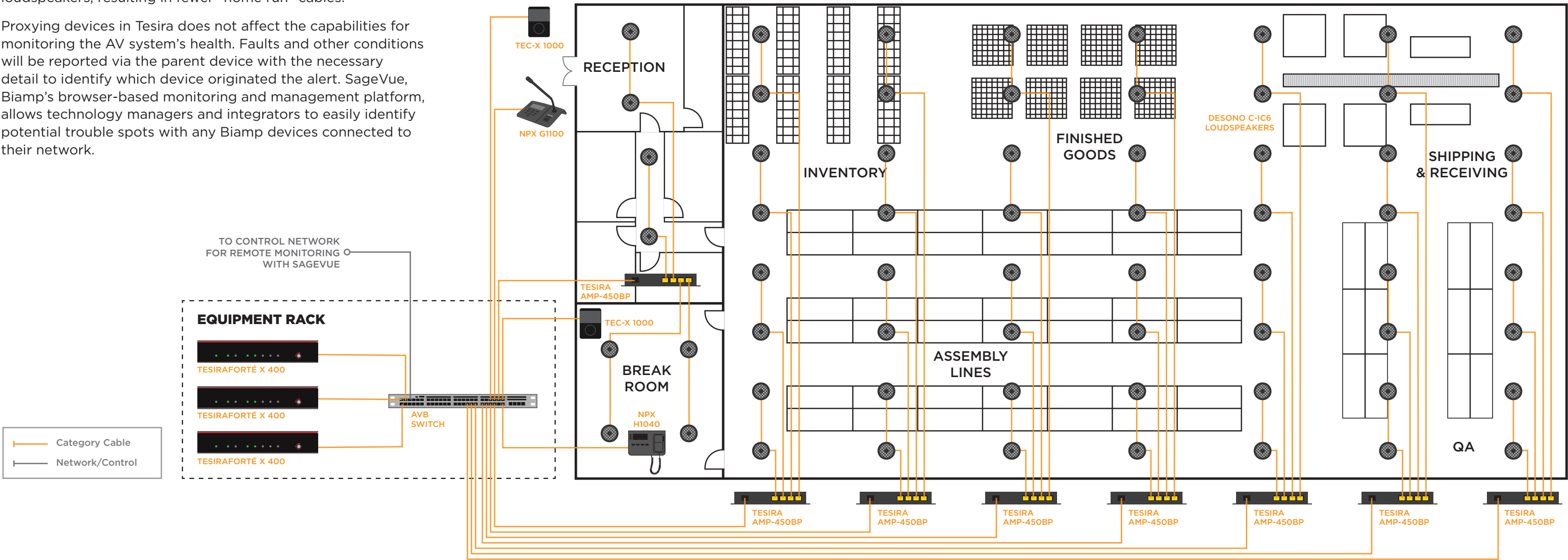
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Tesira’s ability to proxy devices provides significant cost savings over other solutions by significantly reducing port counts. For smaller systems, TesiraFORTÉ signal processors provide a local isolated media network that doesn’t need to interact directly with the campus LAN nor requires a switch to be deployed and provisioned. Only a single control port to the network is required for complete system monitoring.

Biamp’s PoE+ amplifiers are an excellent way to reduce port counts in large deployments, especially when compared against deploying PoE-enabled loudspeakers. With provisioning costs ranging from \$150-\$300 per port, a fully populated 48-port switch can cost \$10k in configuration alone. The Tesira AMP-450BP PoE+ amplifier is equipped with 4 RJ-45 ports for fast, easy loudspeaker connections via standard category cable.

In this manufacturing example, 56 ceiling loudspeakers are located on the manufacturing floor itself with eight additional loudspeakers supporting the front office and break room. Using PoE-enabled loudspeakers in this design would require 64 switch ports and the associated costs to install and configure the network, possibly even requiring the purchase and configuration of an additional switch. Tesira’s ability to proxy expanders reduces the port count to 8 for the PoE+ amplifiers, resulting in an 87% reduction in port count and installation cost. Additionally, the PoE+ amplifiers can be installed close to the loudspeakers, resulting in fewer “home run” cables.

Proxying devices in Tesira does not affect the capabilities for monitoring the AV system’s health. Faults and other conditions will be reported via the parent device with the necessary detail to identify which device originated the alert. SageVue, Biamp’s browser-based monitoring and management platform, allows technology managers and integrators to easily identify potential trouble spots with any Biamp devices connected to their network.



BENEFITS FOR INSTALLERS

- Category cable-based solutions make installation fast and easy
- A simplified network deployment saves time by automatically configuring VLANs and QoS
- PoE+ amplifiers are suitable for use in air handling spaces and can be placed close to the loudspeakers

BENEFITS FOR TECH MANAGERS

- Fewer network ports and Ethernet drops are required, resulting in significant savings
- The room’s AV system can be easily monitored and managed remotely with Biamp SageVue™
- SageVue can send automatic alerts for any system issues and can secure access to the AV system to prevent unauthorized changes

EQUIPMENT LIST

Product	Function
TesiraFORTÉ X 400	Handles digital signal processing and routing for the manufacturing floor.
TEC-X 1000	Provides a customizable yet intuitive interface for room control via touch screen and/or rotary encoder.
Tesira AMP-450BP	4-channel PoE+ amplifier provides amplification throughout the manufacturing floor.
NPX G1100	Network-based convenience paging station with gooseneck microphone. Supports up to 16 paging priority levels and playback of pre-recorded messages.
NPX H1040	Network-based convenience paging station with handheld microphone. Supports up to 16 paging priority levels and playback of pre-recorded messages.
Desono C-IC6	Provides high performance sound reinforcement across the manufacturing floor.

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