

PRODUCT AND APPLICATIONS BULLETIN

FILE: Section 2 [Applications]

PRODUCTS: NEXIA™ CS- Conference System DSP
NEXIA™ PM- Presentation Mixer DSP
NEXIA™ SP- Speaker Processor DSP
Logic Box - Remote Control Bus Device

APPLICATION: Hearing chambers with outputs for reinforcement, program, recording, and media.

REQUIREMENTS:

- Sound reinforcement with microphone-to-speaker 'mix-minus' routing
- Dedicated signal routing for recording, stereo program, and media feeds
- Control of override, mute, privacy, program selection, and camera selection

PRODUCT OVERVIEW:

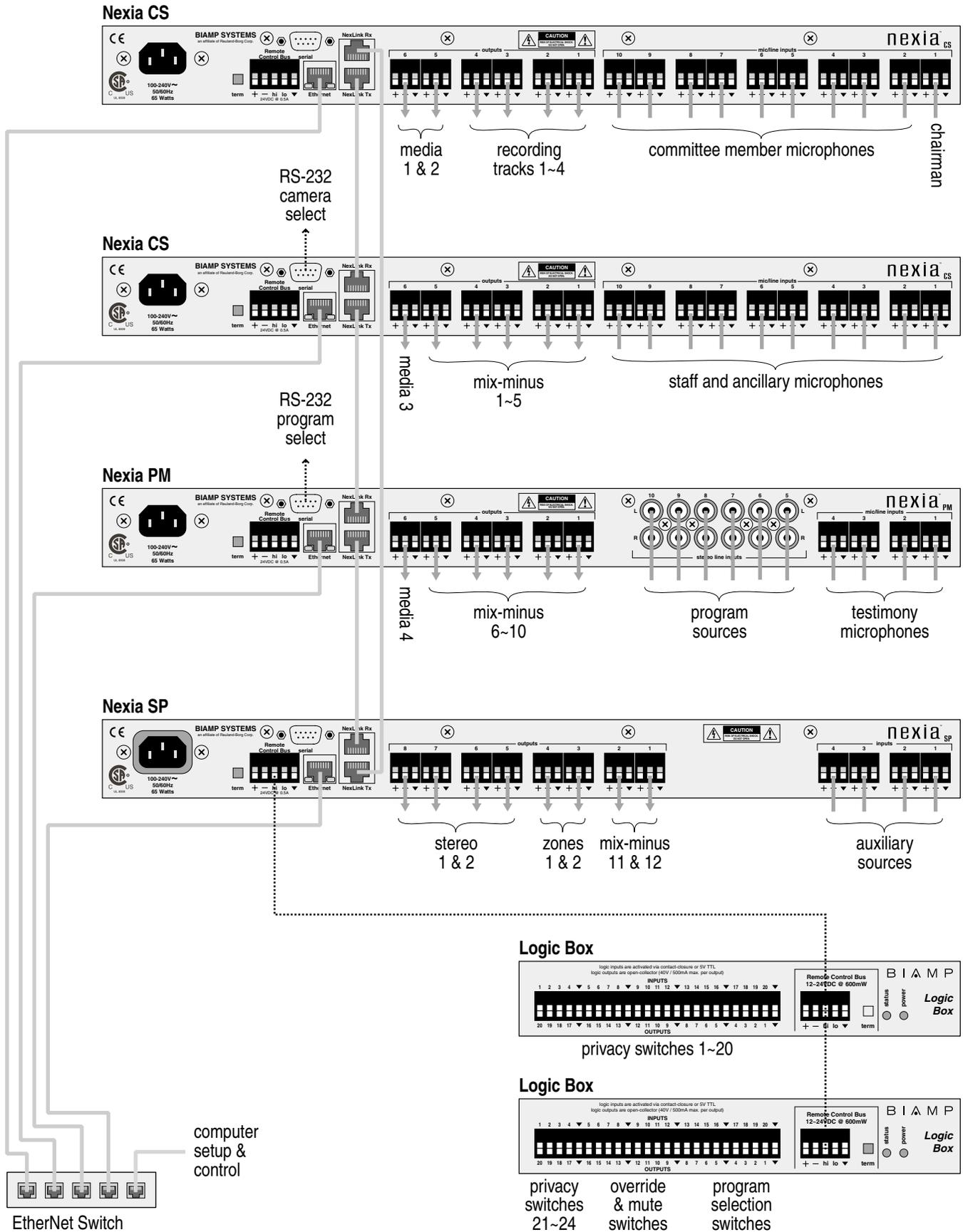
NEXIA CS is a digital signal processor with 10 mic/line inputs and 6 independent mix outputs, intended for a variety of conferencing applications such as boardrooms, courtrooms, and council chambers.

NEXIA PM is a digital signal processor with 4 mic/line inputs, 6 stereo line inputs, and 6 line outputs, intended for multi-media presentation applications requiring both microphone and program content.

NEXIA SP is a digital signal processor with 4 line inputs and 8 independent line outputs, intended for speaker processing requiring line inputs feeding a larger number of discrete outputs.

NEXIA includes a broad selection of audio components, routing options, and signal processing. The internal system design is completely user definable via PC software, and can be controlled via dedicated software screens, RS-232 control systems, and/or a variety of optional remote control devices. Multi-unit NEXIA systems can be created utilizing Ethernet and NexLink™ digital audio linking.

The Logic Box provides both logic input and logic output connections, as a programmable interface to NEXIA devices. Logic inputs allow creation of custom control panels, with completely programmable functions. Logic outputs allow NEXIA devices to provide programmable triggers to external circuits, such as status indicators, speaker relays, and pan/tilt/zoom cameras.



APPLICATION EXAMPLE:

This application demonstrates NEXIA™ being used in Senate hearing chambers. This is a multi-unit system using two NEXIA CS (*ten mic/line inputs, six mic/line outputs*), one NEXIA PM (*four mic/line inputs, six stereo line inputs, six line outputs*), and one NEXIA SP (*four line inputs, eight line outputs*). These units become one cohesive system by utilizing NexLink™ and Ethernet. An example system diagram is shown on the opposite page, and a representative design layout is shown on the back page.

Ten dais microphones (*committee members and chairman*) connect to mic/line inputs 1~10 of the first NEXIA CS. Ten microphones (*staff personnel and ancillary use*) connect to mic/line inputs 1~10 of the second NEXIA CS. Four microphones (*testimony table*) connect to mic/line inputs 1~4 of the NEXIA PM. Six program sources (*two computers, DVD, VCR, CD, tape*) connect to inputs 5~10 of the NEXIA PM. Four auxiliary sources (*4-track record / playback*) connect to line inputs 1~4 of the NEXIA SP.

The first NEXIA CS has outputs 1~4 feeding a 4-track recording system and outputs 5 & 6 providing media feeds 1 & 2 (*all set for mic-level*). The second NEXIA CS has outputs 1~5 providing 'mix-minus' feeds to committee monitor speakers (*one per each pair of microphones*) and output 6 providing a third media feed (*line-level*). NEXIA PM outputs 1~5 provide 'mix-minus' feeds to staff monitors and output 6 is a fourth media feed (*line-level*). NEXIA SP outputs 1 & 2 provide 'mix-minus' feeds to testimony table monitors, outputs 3 & 4 provide feeds for sound reinforcement in two gallery speaker zones, and outputs 5~8 provide two stereo feeds for reinforcement of program signals in dedicated speakers.

The four NEXIA units have their NexLink ports inter-connected using Cat5 cables. In the design, signals are shared between NEXIA units by means of NexLink blocks. Each unit is given a NexLink block assigned to transmit up to sixteen channels of digital audio to the next unit in the system. This permits all necessary routing of signals. Examples of this routing technique are discussed below.

Microphones are connected to Auto Mixers in separate NEXIA units. To allow these Auto Mixers to function as one integrated device, their main outputs must be connected together via a Mix Minus Combiner block, which has been placed in the NEXIA SP (*Unit #4*). Auto Mixer main output signals are shared amongst all units (*including Unit #4*) via the last few channels of each NexLink block. This also makes these signals available in the other units, for creation of the necessary 'mix-minus' outputs.

Mix-minus outputs are created by mixing individual channel direct outputs from one Auto Mixer with the main outputs of the other two Auto Mixers. In the second NEXIA CS (*Unit #2*), Auto Mixer direct outputs from Unit #1 are mixed with Auto Mixer main outputs from Units #2 & #3. This allows specific microphones to be removed from their respective monitor mix. Similar mixing occurs in Units #3 & #4.

Media feeds receive a mono mix of all signals. Recording assignments are: chairman to track-1; committee to track-2; staff to track-3; testimony & program to track-4. Zone 1 & 2 outputs receive only microphone signals, and Stereo 1 & 2 outputs receive only the selected program material. Auxiliary inputs are routed to corresponding tracks of the recorder (*for dubbing/transcription*).

For system control, two Logic Boxes handle the individual microphone privacy switches, as well as chairman override, system mute, and program selection switches. Command String blocks allow control of external RS-232 devices. They are used here for automatic control of pan/tilt/zoom cameras (*based on Auto Mixer activity*), and for video switching (*associated with program source selection*). An Ethernet switch allows all units to be linked for system-wide programming and control.

Example NEXIA design (NEX file):

