

PRODUCT AND APPLICATIONS BULLETIN

FILE: Section 5 [Applications]

PRODUCTS: AudiaEXPO - Audia® Output Expander
AudiaFLEX - Audia Digital Audio Platform
MCA8050 Multi-Channel Amplifier

APPLICATION: Hospital with multiple zones of paging, messaging, and background music.

REQUIREMENTS:

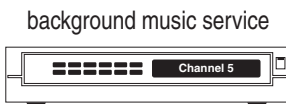
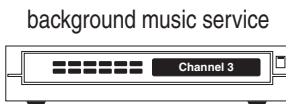
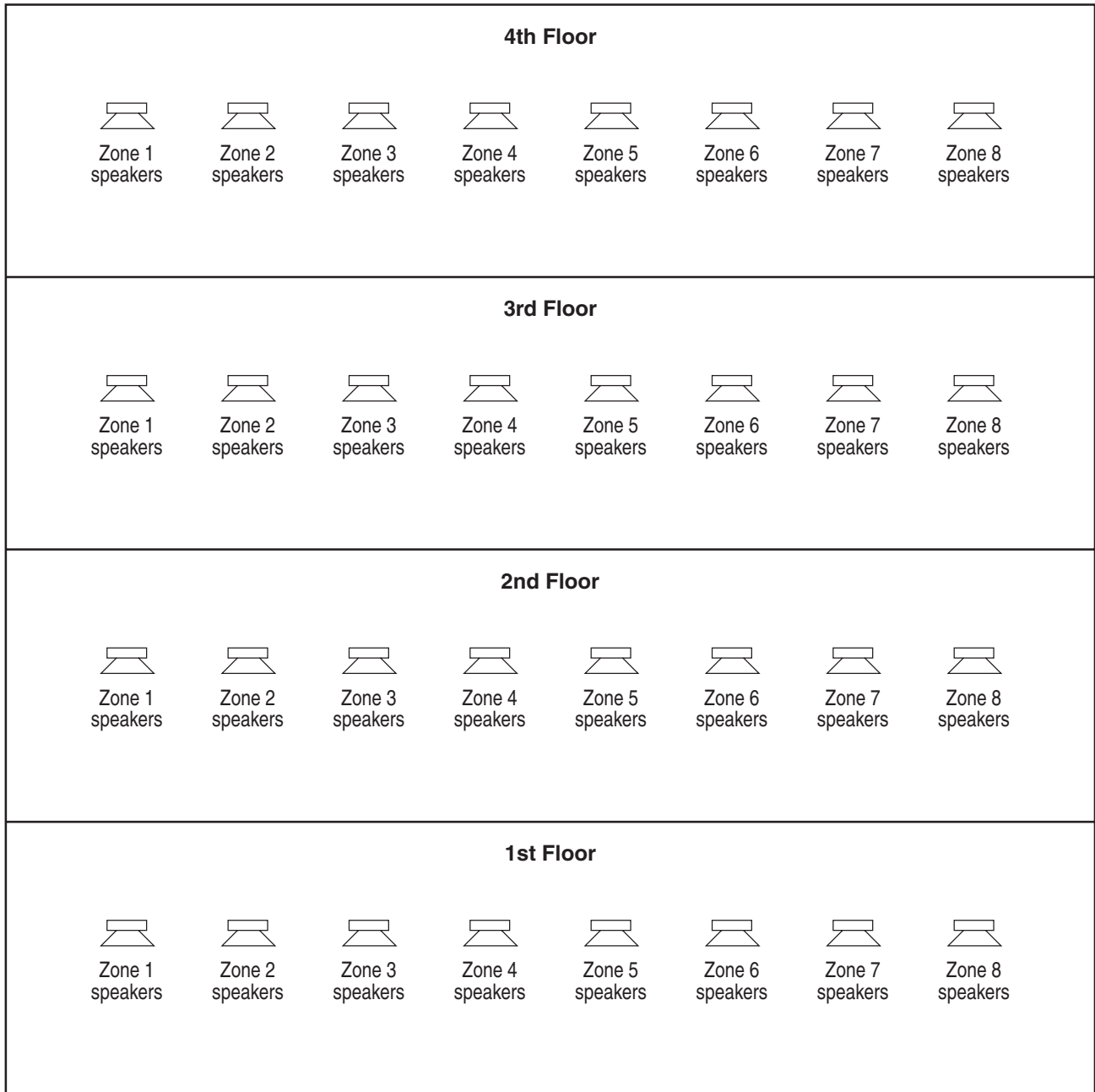
- Hospital building with four floors, and eight sub-zones per floor
- Central zone-paging microphone with telephone paging per floor
- Selectable background music sources and prioritized messaging

PRODUCT OVERVIEW:

AudiaEXPO is an output expander, which accepts eight channels of digital audio input via CobraNet® and provides eight line-level analog audio outputs. AudiaEXPO can simply add outputs to a centralized Audia system, or it can extend system boundaries by providing outputs in remote locations. AudiaEXPO is represented as a block in Audia software, for easy inclusion into any system design. AudiaEXPO may also be used to provide outputs from other CobraNet compliant systems or devices.

AudiaFLEX is an expanded version of Audia, the benchmark in digital audio systems. AudiaFLEX provides the same easy-to-use software and functional algorithms, but with greater flexibility in the choice of I/O configurations. Inputs and outputs may be specified by pairs, in any combination, up to a total of 24. All possible I/O configurations are available with or without CobraNet, for networked or stand-alone applications. Intuitive software provides audio system design via PC computer, and allows easy selection, viewing, and calibration of numerous audio components: mixers, combiners, matrixes, equalizers, filters, crossovers, dynamics, routers, delays, remote controls, meters, generators, diagnostics, etc. Once a system design is compiled, it is downloaded into AudiaFLEX, where it can then be controlled via AMX® / Crestron®, via computer, or via dedicated Audia remote control panels.

MCA8050 is a multi-channel amplifier, providing eight outputs of 50 watts each into 4 ohms. Channels may be bridged in pairs for higher combined wattage. Connections are provided for remote control of channel levels & muting. Internal transformers are available for 25/70/100V speaker systems.



APPLICATION EXAMPLE:

This application demonstrates the use of Audia in a multi-zone hospital building. This is a networked system using one AudiaFLEX 8x8CM unit and three AudiaEXPO 8-Output Expander units (*eight inputs, thirty-two outputs, CobraNet*). An example system diagram is shown on the back page.

All inputs (*paging microphone, message repeater, background music, and telephone system*) reside on the first floor of the building, and are connected to the AudiaFLEX unit located there. The AudiaFLEX unit also provides the outputs necessary to feed the eight zones on the first floor. An AudiaEXPO unit is located on each of the other floors, and provides the corresponding zone outputs for that floor.

The AudiaFLEX unit distributes the appropriate signals to the AudiaEXPO units on the other floors as digital audio via CobraNet. This is beneficial because some of the input sources are 'unbalanced' and, as such, should not be routed over long distances. Additionally, CobraNet affords the necessary isolation to help avoid ground loops between the active components located on different floors. CobraNet also saves on the labor and expense of wiring, by transmitting all eight of the associated zone output signals to a given floor over a single CAT5 cable.

The zone outputs on each of the floors are connected to an MCA8050 multi-channel amplifier, located in the same equipment rack as the AudiaFLEX or AudiaEXPO unit. Each MCA8050 amplifier has eight channels, delivering 50 watts of power per channel. With eight TDT50 transformers installed internally, each MCA8050 is prepared to drive the eight 70 volt distributed speaker systems on that floor.

CobraNet from the AudiaFLEX unit to the AudiaEXPO units is tied together through an Ethernet switch. This allows sharing of digital audio signals (*CobraNet*) on a network. The maximum distance between any Audia unit and an Ethernet switch is 300 feet. Therefore, this system can span up to 600 feet between the first floor equipment rack and any of the other floors. Additional Ethernet switches, or even fiber-optics, can be used to further extend distances between units on the network.

All mixing and processing of signals is accomplished within the AudiaFLEX unit on the first floor. In the system design, the paging microphone is fed to a Router (*1x32*) for assignment to the individual zones. The message repeater is fed to a Router (*1x4*) for assignment to the four floors. The two background music inputs are both fed to four separate Routers (*2x1*) for source selection on each of the four floors. Telephone paging is fed to a set of four Duckers (*one for each floor*) to provide page-override of the selected background music on that floor. Output from the message Router is fed to a second set of four Duckers (*one for each floor*) to provide message-override of the telephone and music signals on that floor. Finally, output from the microphone Router is fed to a bank of thirty-two Duckers (*one for each zone*) to provide master page-override of all other signals in any selected zones. Levelers are utilized on all paging and message inputs (*to provide consistent volume levels*), and equalizers are utilized at all outputs (*to compensate for building acoustics and enhance intelligibility*).

Various remote control options are available. *Volume 8, Select 8, and Volume/Select 8* rotary encoder panels may be used to provide volume, source selection, and even page routing functions. Two *Logic Box* control devices could instead provide forty logic inputs, which would allow all page/message routing and music source selection to be accomplished using external switches on custom control panels.

