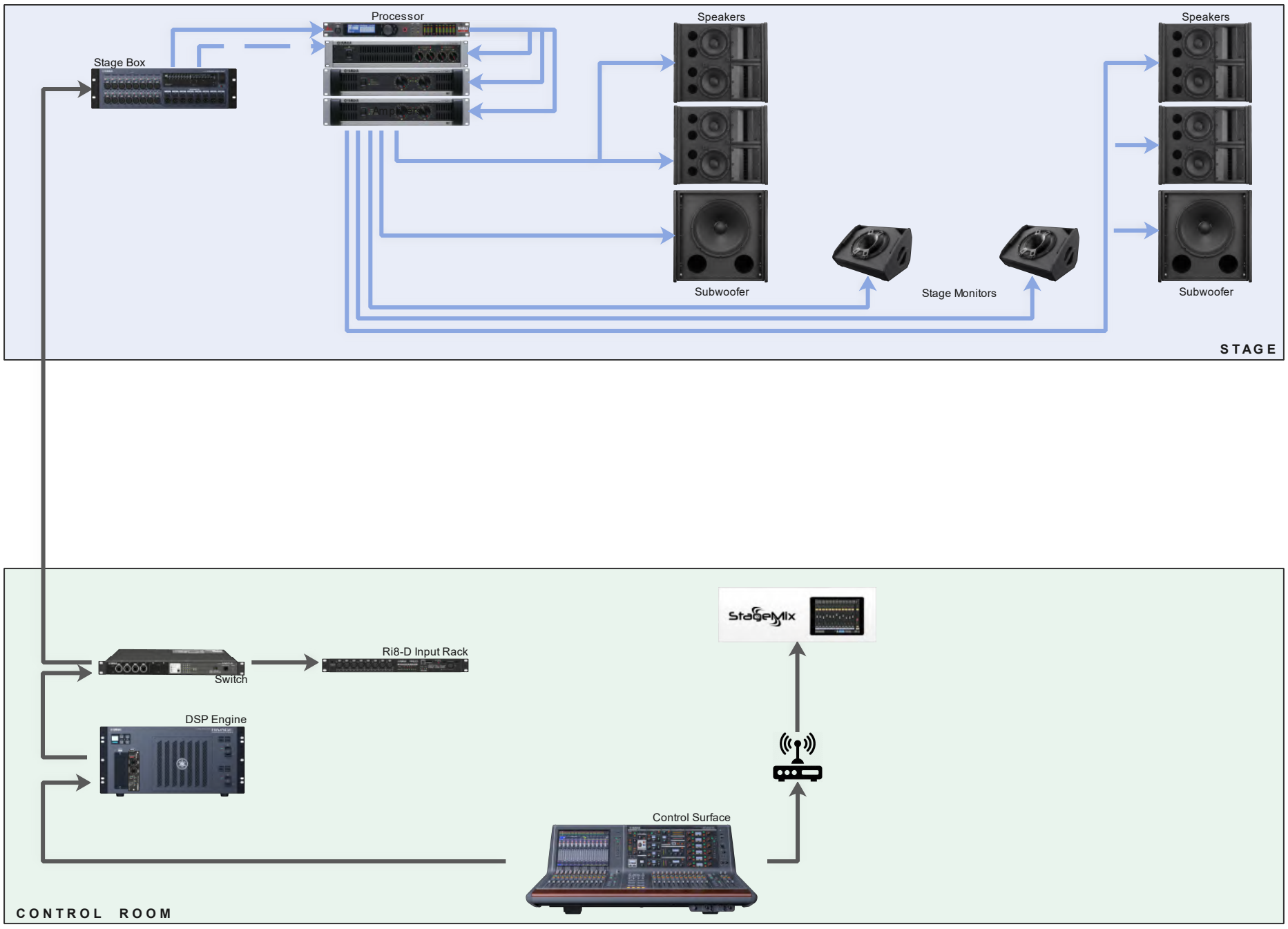
CHURCH SOUND SYSTEM CONFIGURATION EXAMPLE A



In these church sound system configurations we can see a combination of digital and analog architectures, sound and video equipment. Digital mixing boards and line array speakers have been gaining popularity even in small to medium church sound configurations.

What is a line array? Line arrays speakers are stacked modular loudspeaker systems that can generate significant sound pressure levels SPL while controlling to some degree the directivity of the sound. As we can see in the diagram (example A), the digital console (most likely placed in the back of the room) is connected to the stage through a switch, a stage box and optional DSP unit (depending on the digital mixer model, the DSP unit can be within the control surface itself).

Some of the signal outputs of the stage box will be routed to the main speaker processor that will feed the line arrays, the subwoofers and depending on configuration, other speakers as well. The stage box will route some of the signals to the floor monitors.

What is a loudspeaker processor or loudspeaker management processor? Loudspeaker processor it is a device that can route certain audio inputs to certain audio outputs (digital or analog), while adding specific processing to those Inputs and Outputs.

Why do we have to use a loudspeaker processor? The decision of not using a speaker processor will drastically affect the overall functionality of the system, and in many cases, the difference between having a functional system and …the alternative. So in a few words, the loudspeaker processor is a must.

The loudspeaker processor have the ability to add very specific processing to each output in order to accommodate frequency and time system enhancements.

In the second example configuration, we've added another way to connect the stage box to the main digital control surface (digital mixer/console). So instead of connecting the Control Surface and the DSP directly to a stage box from the first switcher (that would be in the same location with the control surface), a second Switch is used in between. That would give you the ability to connect other devices to the switch and enhance the architecture in the future.

Also we've added more amplifiers that correlates with more stage floor monitors. The audio signals to the amplifiers that are feeding the floor monitors can come from the stage box outputs directly or from a loudspeaker processor.

The third example church sound system configuration uses an architecture with two control surfaces/digital mixers. One is used for the front of the house and the other one is used as audio for video mixing, streaming and recording.

As we can see in the architecture, each of the digital mixers/control surfaces have their own DSP (for that particular control surface model). Each switch can accommodate their own stage boxes (different sizes). Based on the number of main speakers, subwoofers, floor monitors and the audio sources needed, the configuration may have to accommodate one or multiple stage boxes. These examples are just for visualizing a general overview of a potential configuration.

Usually digital consoles have the ability to be controlled from a mobile device. That gives the sound engineer the ability to be mobile on stage while making stage floor monitors adjustments for example.

What is a Personal In-Ear Monitor Mixing System?

A personal InEar monitoring/mixing system serves as a personal tool to create your own mix while using a small 8, 16 or more channels mixer that is connected to the main mixing console/surface system.