

# Sacred Room Combining



## INEXPENSIVE AND EFFECTIVE ROOM COMBINE SOLUTIONS FOR HOUSES OF WORSHIP

*by Cameron Smith*

Once reserved only for the hotel, convention, and conference industries, room combine systems are finding a place in houses of worship. Combinable spaces for meetings, weddings, and miscellaneous church events have become mandatory in congregation halls, and even the sanctuaries themselves—typically suitable 363 days of the year—are now facilitating flexible overflow functionality during the holiday surge. As new houses of worship are increasingly built with configurable topologies and existing sanctuaries add moveable walls, it is important to realize several options exist when choosing a room combine system.

### WHAT IS ROOM COMBINE?

Before tackling the “hows” and “whys” of room combining, it is important to define exactly what we are talking about. Much like the name implies, room combining infers the union of two or more spaces, commonly referred to as rooms. These rooms are typically divided by moveable walls and function as individual units or are combined with adjacent rooms to form larger units. The room combine system coordinates the audio and/or video, determining if the walls are open and the local AV sources and destinations

should be merged, or if the walls are closed and local AV sources should remain in their respective rooms.

Houses of worship typically utilize room combine systems in one of two ways: either in parish halls and congregational meeting facilities (essentially any large, multi-purpose space) or in the sanctuary itself. Depending on the application, the solution may be as simple as two mic/line mixers with a relay switch, or as complex as a touch-panel controlled matrix dedicated strictly to the combining logic.

## SIMPLE ROOM COMBINE-COMBINING THE SANCTUARY

Not all room combining involves a dedicated, programmed matrix mixer or sophisticated control system; many houses of worship simply use two mic/line mixers and a hardwired relay switch for routing audio to the appropriate location. Granted, the complexity of the environment ultimately determines the appropriate solution, but spending thousands of dollars on unnecessary sophistication is seldom desirable and rarely appropriate for the tight budgets of smaller houses of worship.

As **figure 1** illustrates, a typical house of worship two-room room combine system occurs in the sanctuary, as is the case with Temple Beth El in Madison, WI. The main area of the temple is divided into

two rooms—the sanctuary (A) and the social hall (B). During the majority of the year, the sanctuary comfortably accommodates the congregation, allowing separate after-service events to be hosted in the social hall. However, during the holidays, the two areas are combined to accommodate increased attendance.

The actual logic behind the room combining is simple—two Intelix AMIX automatic mic/line mixers are jumpered together with a contractor supplied relay (DPDT) switch. When the rooms are divided and function as separate units, one AMIX mixes the audio for the sanctuary, while the other AMIX mixes the audio for the social hall. However, when the dividing wall is removed and the sanctuary and social hall are

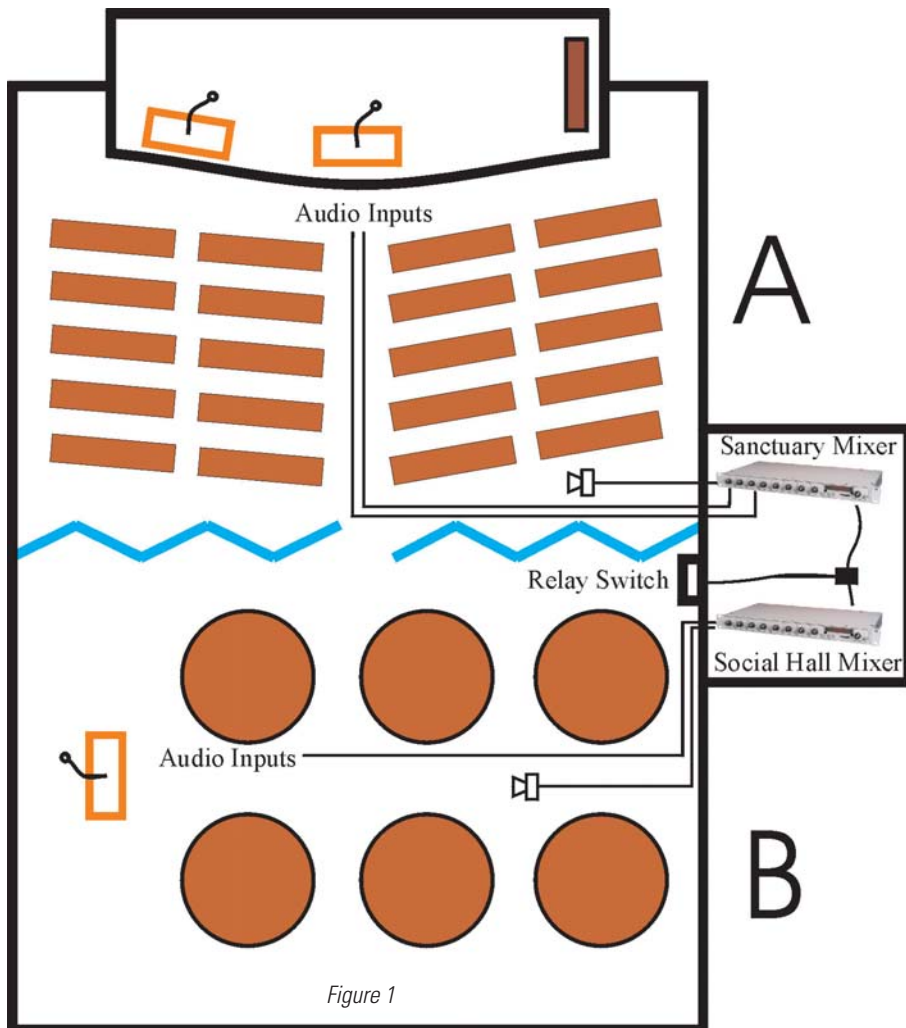


*Close up of rack, containing the Audio Room Combining Matrix Mixer*

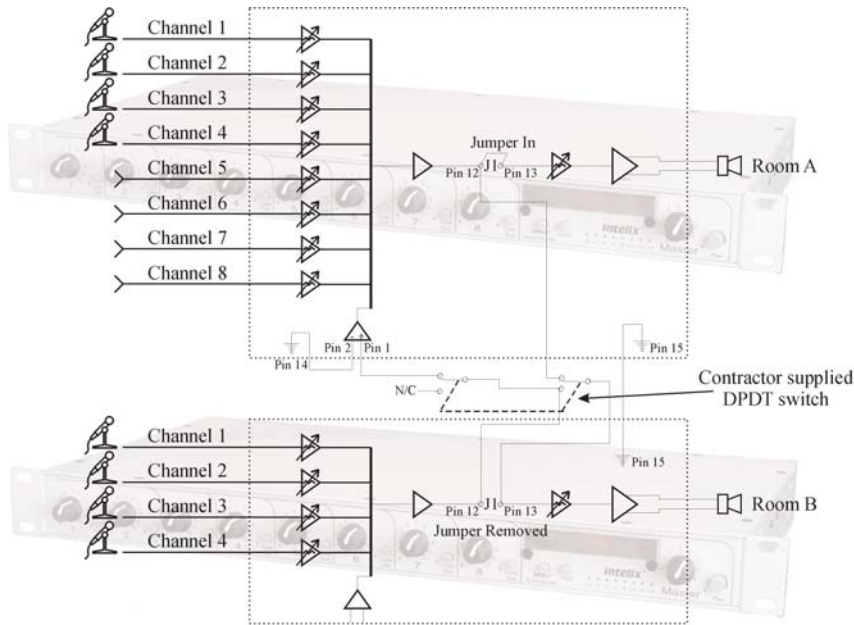
“...during the holidays, the two areas are combined to accommodate increased attendance”

combined, audio passing through the two AMIX mixers is merged through a wall-mounted relay switch, effectively routing audio inputs from both the sanctuary and the social hall into the combined space.

The key to the system is the mic/line mixer’s auxiliary output, which in this case allows the two AMIX’s to connect to one another. As shown in **figure 2 on page 34**, the auxiliary outputs are jumpered together creating a connected system capable of transmitting audio into the combined area. Essentially any mic/line mixer with an auxiliary output is capable of this feat.



*Figure 1*



Simple 2-room room combining using one Intelix 8-channel AMIX mic/line mixer and one Intelix 4-channel AMIX mic/line mixer.

Figure 2

whereas two thirds of the area contained a tiled floor and a vaulted ceiling.”

Based on the environment and typical projected use patterns, the parish decided to divide St. Michael Hall into four combinable room groups. The area with carpeted floors and drop-tiled ceilings would be broken into three separate rooms, each about 20' by 50', whereas the remaining area, the 75' by 70' ballroom with tiled floor and vaulted ceiling, would be the fourth room group. All rooms would have floor boxes for local microphone and source inputs.

To complete the task, Rodney Coronel suggested an eclectic package of audio/video equipment with an Intelix MARC 16 input by 8 output audio room combining matrix mixer serving as the heart of the audio room combine environment. The MARC would mix the audio from the mic and source inputs, as well as provide the logic for routing the sources to the appropriate individual or combined rooms.

Today, Our Lady of Mount Carmel has an operational four-room combine system complete with selectable background music.

### MODERATE ROOM COMBINE-COMBINING THE PARISH HALL

When combining two rooms, mic/line mixers provide an inexpensive, feasible solution. However, for spaces divided into multiple rooms, a dedicated matrix mixer specifically programmed for room combining is often required, as was the case with Our Lady of Mount Carmel Church in Newport News, Virginia.

Our Lady of Mount Carmel recently completed construction of St. Michael Hall, which contained a large, open area ideal for room combining. The parish decided to maximize the space by dividing the hall into several combinable rooms—a task too complex for auxiliary output mic/line mixers—but could not afford the expense of a touch panel control system. The parish approached The Whitlock Group of Virginia Beach, Virginia, for a reasonable solution.

“Our Lady of Mount Carmel presented a problem experienced over and over again in the audio/video industry—a long wish list with half the budget,” explains Rodney

Coronel, Account Manager for The Whitlock Group. “Ultimately, we needed an inexpensive solution that addressed the parish’s needs while conforming to the environment. Conforming to the environment proved no easy task—one third of the area contained a carpeted floor and standard drop-tile ceiling,





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Volume control and background music selection is provided from a versatile Crestron mini-touch control system package, as well as Intelix RCS Room Control Stations mounted in each of the four rooms. Actual room combining control is provided from an Intelix RC-

**“...random, rapid selection of options for the sake of pushing buttons—can do serious damage, even entirely lock-up the system**

4 control panel located in an A/V rack stationed in the parish’s administrative office.

Hart Smith, the parish Director of Facilities, is extremely pleased with the entire combine system. “The system is user friendly and has been very successful. The Whitlock Group performed an excellent install.”

## THE ROOM COMBINE SYSTEM- OPTIONS FOR CONTROL

A room combine system consists of more than just the actual matrix mixer—the system is also composed of the control devices which stimulate the logic within the matrix. These devices may be as sophisticated as PC software or as simple as magnetic relays, as costly as an RS232 touch panel or as inexpensive as a manual room combine panel. Ultimately, the room combine devices must reflect the desired method and amount of control given to those who use and manage the system.

In the case of Our Lady of Mount Carmel, the external control devices were an inexpensive Intelix RC-4 room combining control panel, which topographically depicted the layout of St. Michael Hall, and four RCS Room Control Stations. The RCS stations simply adjust audio properties, such as source selection and volume control; the RC-4, on the other hand, provided manual selection of the room’s wall-state—which walls were open and which walls were closed—indicated by LEDs. The moveable walls could be readily opened or closed, but to trigger the actual combining of audio involved manual selection on the room combine panel by an employee dedicated to the system.

Several other options exist for manual control devices, the most expensive typically being RS232 touch panels. Though touch panels are aesthetically appealing and can perform a multitude of functions, often times they cost nearly as much as the matrix mixer at the heart of the system. Further, touch panels often require programming to perform various tasks, such as opening and closing wall-states in the case of room combining. If programmed too complex, a simple desire such as eliminating background music may prove complicated for end-users. Very often untrained end-user control—a.k.a., random, rapid selection of options for the sake of pushing buttons—can do serious damage, even entirely lock-up the system. Thus, when designing a room combine system with RS232 touch panel, it is imperative to determine who will be using the panel and the appropriate level of sophistication.

Many room combine system manufacturers offer intuitive software packages which control the functions of the matrix mixer, as well as the system as a whole. Designed for the facility manager, these software packages are typically straightforward and easy to use; however, they require a PC and, like room combine panels, a dedicated employee to operate.

Our Lady of Mount Carmel opted for manual control through a room combine panel, effectively placing control in the hands of the full-time Director of Facilities. While this is ideal for a house of worship with an employee dedicated to the system, many facilities cannot afford to have someone manually control the combining logic—

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whether through software or combine panels—every day. Instead, they must rely on a more automatic approach.

Several room combine systems offer the option of automatic control through magnetic or optical wall sensors. These sensors “sense” whether the moveable wall is open or closed, triggering the logic within the matrix mixer accordingly. Wall sensors are ideal in facilities without an employee dedicated to maintaining the system—end-users can simply open or close walls as needed and the audio will automatically combine or separate as needed.

Thus, an important concern when selecting a room combine is control—more specifically, where control is placed. If control is placed with a dedicated employee, software and combine panels make sense. If control is placed with end-users, automation or simply programmed touch panels are likely the most suitable options.

#### **COMPLEX ROOM COMBINE- MARRYING THE SANCTUARY AND THE PARISH HALL**

Very often the room combine system located in the parish hall must be integrated into the house of worship’s broader audio/video system, forming a complex, interconnected A/V network. A typical example involves

holiday overflow, except unlike our first example involving two mic/line mixers, the overflow occurs not in an adjoining social hall, but a disconnected parish hall.

For example, assume a house of worship contains a sanctuary and disconnected parish hall located in a lower level. The sanctuary, typically suitable for regular services, contains an auxiliary output mic/line mixer which distributes local mic and music feeds throughout the sanctuary. The parish hall, typically used for meetings, Sunday School, and social events, contains a room combine system which manages the audio and logic for the combinable rooms. The mic/line mixer and room combine system are generally independent and function as two distinct systems for most of the year; however, during the holidays, the sanctuary is no longer large enough for the swelling number of parishioners and audio from the sanctuary must be routed to the parish hall where the overflow parishioners are gathered.

As with the first example, the key to the complex system is the mic/line mixer’s auxiliary output. The auxiliary output feeds audio from the sanctuary to an audio input on the room combine system in the parish hall. The room combine system then treats the audio from the sanctuary as any other audio input, it is mixed and routed accordingly.

Many houses of worship are installing room combine systems of varying complexities for audio and/or video distribution. Smaller houses of worship opt for the simple combining of inexpensive auxiliary output mic/line mixers, whereas larger houses require a dedicated room combine system, capable of managing wall-states and routing sources accordingly. And while many options exist, ultimately it is the layout of the building and the level of control which determines the appropriate solution. ♦

## INSTANT ACCESS

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