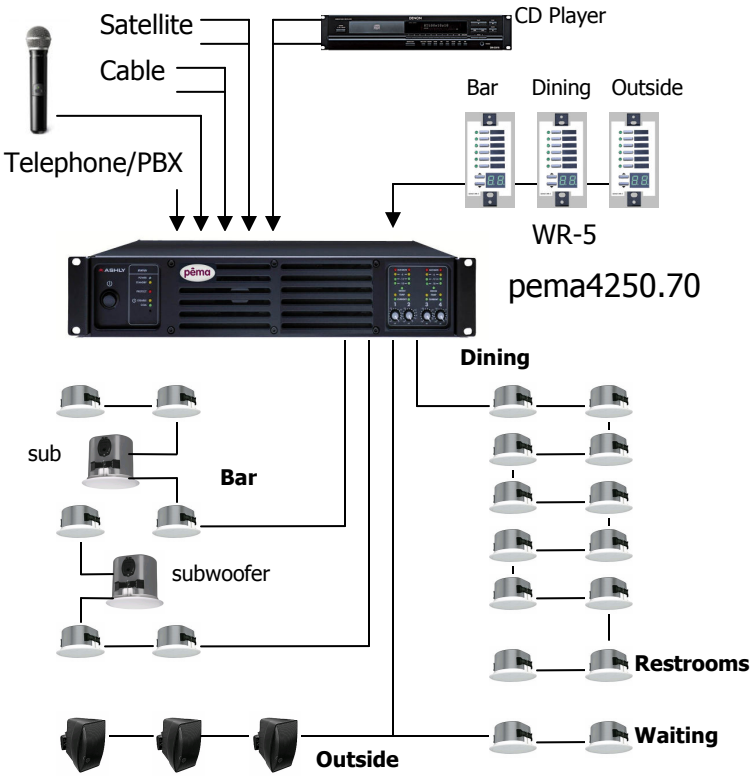
Ashly's PEMA™ has the features that let Systems Integrators replace a rack of amplifiers and signal processing equipment with a single two-rack unit. The combination of a 4 or 8-channel amplifier, 8-in x 8-out sophisticated matrix mixing, and DSP signal processing brings a new level of technology and innovation to Restaurants, Retail Stores, liturgical Churches, School Gymnasiums/Cafetoriums and Courtrooms. Systems designers can select either 125W or 250W output units that are a perfect fit for your project based on ceiling height, loudspeaker sensitivity and ceiling speaker density.



Restaurant in a Box

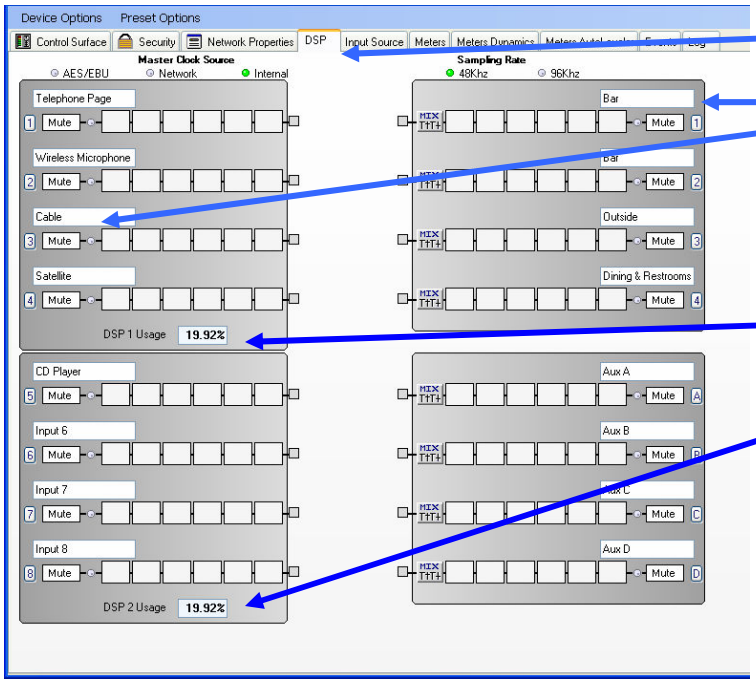
- Mic/Line Inputs
  - Telephone input on Channel 1
  - Paging Microphone
  - Dual RCA on all inputs
  - EQ / Compressor
- Input Mix Matrix
  - Automatic Feedback Suppression
  - Event Scheduling
  - Stereo summed to mono
- Four Channel Power Amplifier
  - EQ / Delay / Limiter
  - 250W into 70V per channel
- Ethernet control is standard
- Extensive protection circuitry
- WR-5 Remote Control
  - Select zone input
  - Adjust zone level
- Remote Power On/Off
  - Disable power switch

Creating and controlling a restaurant sound system has now been simplified with Ashly's PEMA™ Series multi-channel power amplifier. This application uses the **pema4250.70**, a 4 x 70V power amplifier with an 8 x 8 mic/line matrix mixer and DSP on all inputs and outputs. Processing blocks include Gain-Sharing Automatic Mixing, Automatic Feedback Suppression, Stereo-Summed-to-Mono, Ambient Noise Control, Equalization, High-, Low- and All-Pass Filters (HPF/LPF/APF), Delay, Compressor/Limiter, Gate, Ducking, Gain and Signal Generators (sinewave, white and pink noise). The full Matrix Mixer with assignable routing allows any input to drive any or all amplifier outputs.

Connected directly to the **pema4250.70** inputs will be a stereo satellite input, stereo cable TV input, a CD player, a handheld microphone, and telephone paging. Stereo RCA inputs are properly summed to mono on each input. Input eq and compressors are set specifically for the individual inputs. The microphone has the bass rolled off and music has the bass "pumped up". The internal matrix routes inputs to the applicable power amplifier outputs. Each output has dedicated eq and limiter protection applied. 250W-70V is available on each of the four (4) powered outputs.

One WR-5 wall remote is configured for each zone and allows the user to select the audio source and make level adjustments as needed.

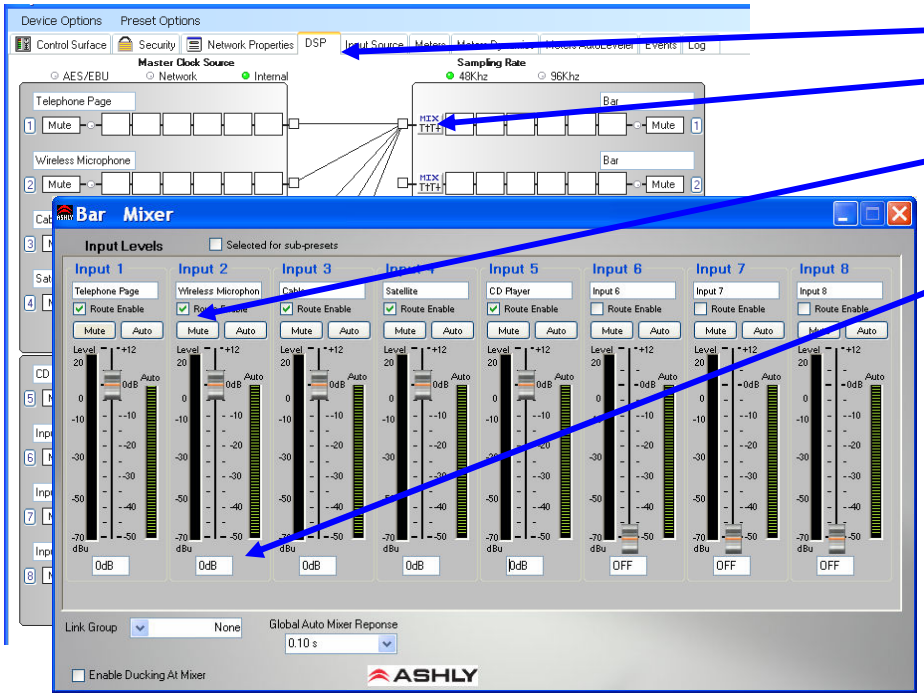
Setting up a DSP processor will be unique to your application.
Here are a few things to consider when setting up your Restaurant-In-A Box system:



Click on the “DSP” tab

Use recognizable names (labels) on the input and output sections, it could be years before you see them again.

DSP usage is maximized by dividing inputs between DSP 1 (Inputs 1 – 4) and DSP 2 (Inputs 5 – 8)



Click on the “DSP” tab

Click the “Mix” block

Select “Route Enable” on each active input to connect to this output

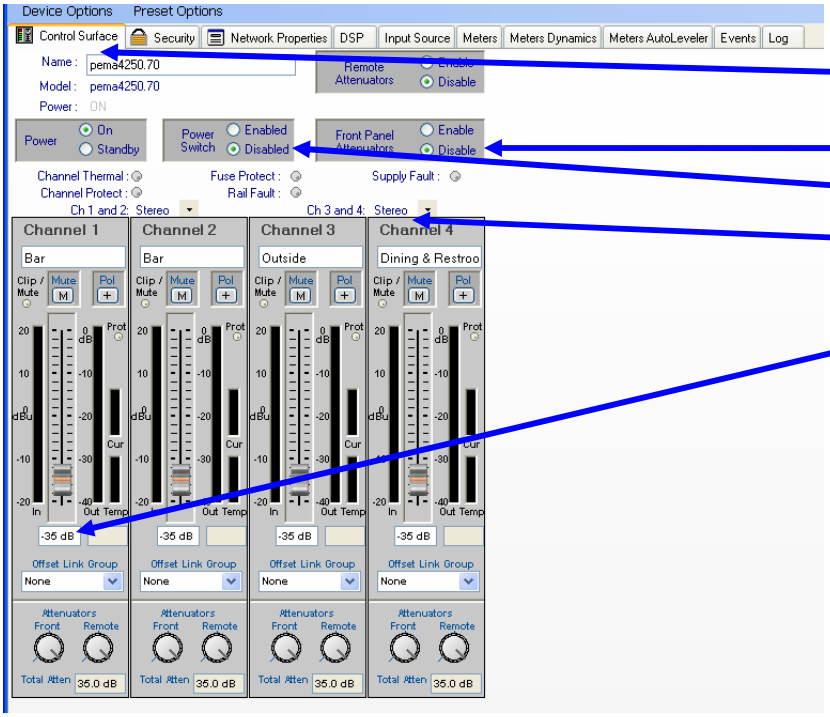
Set enabled inputs to 0dB.

Right click on the “Mix” block and select *copy*.

Right click on the rest of the “Mix” blocks and *paste*

Visit www.ashly.com to download Protea software and data sheets

Setting up a DSP processor will be unique to your application.
Here are a few things to consider when setting up your Restaurant-In-A Box system:



Click on “Control Surface”

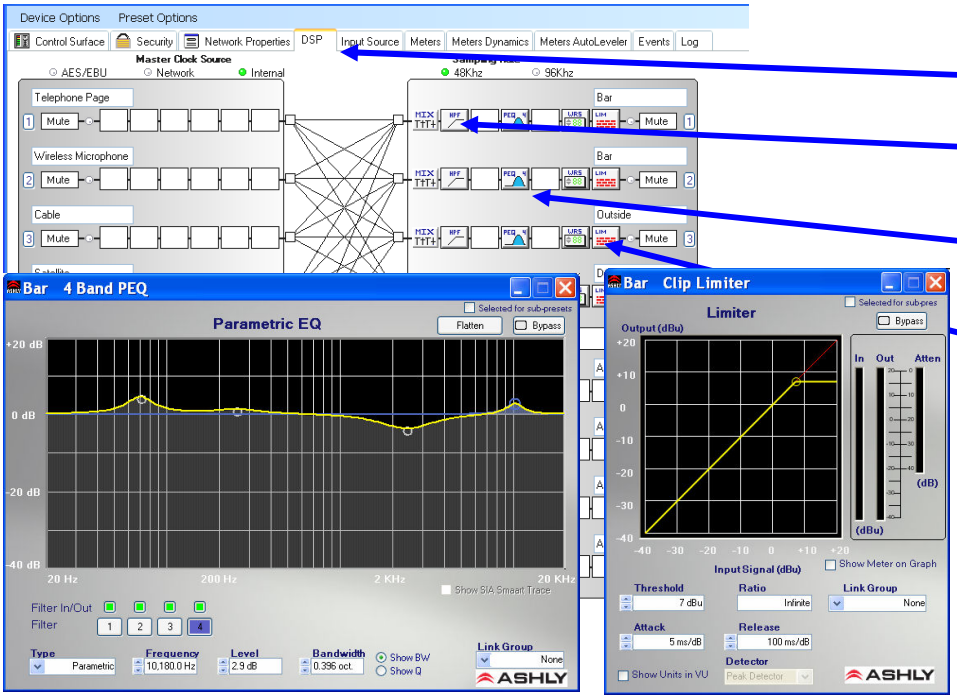
Disable front attenuators

Disable the power switch

Select “Stereo” for all

Start with the output levels at -15dB (-35dB absolute)

Return to this tab and adjust for the desired output levels when the system is fully configured



Click on the “DSP” tab

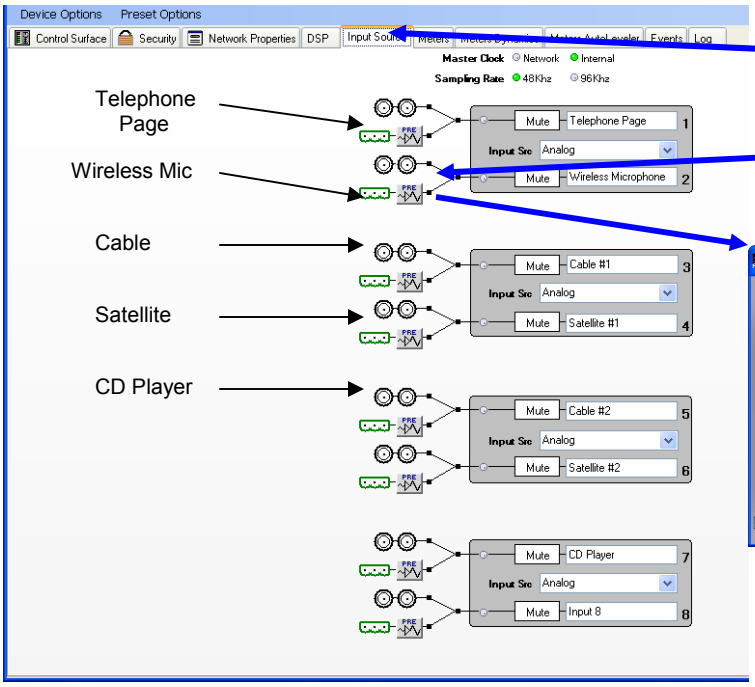
The “HPF” block is used to protect the speakers
(see specs on your speakers)

The “PEQ” block is used to smooth frequency response

The “LIM” block is set to prevent output clipping
pêma sensitivity ratings;
125W @ 3.2dBu
250W @ 6.2dBu
70/100V @ 7.2dBu

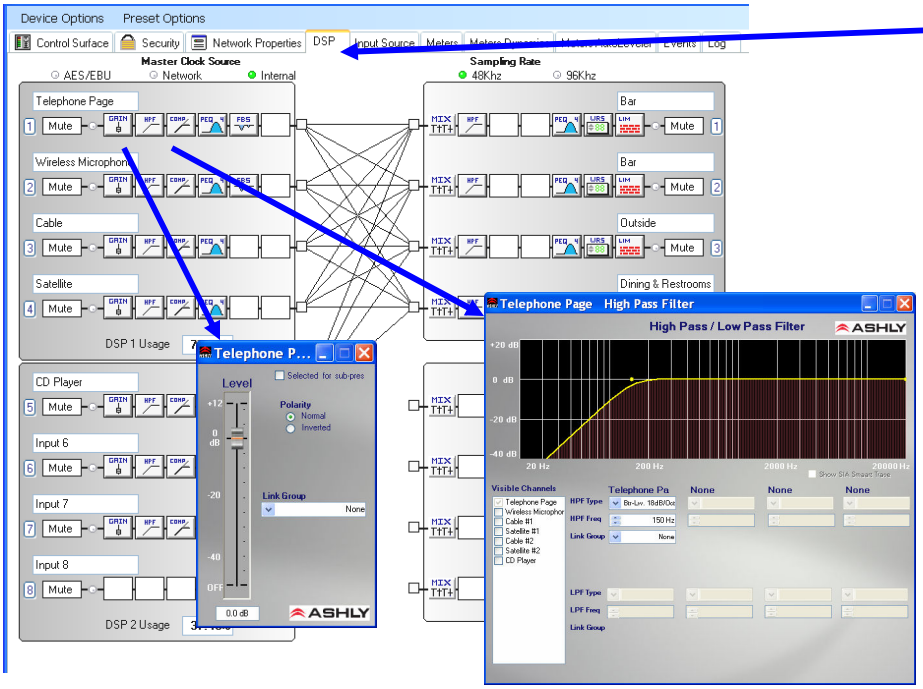
Visit www.ashly.com to download Protea software and data sheets

Setting up a DSP processor will be unique to your application.
Here are a few things to consider when setting up your Restaurant-In-A Box system:



Click on the “Input Source” tab

Click on the mic-pre block and set microphone inputs for the necessary gain



Click on the “DSP” tab

Add functions to each input

The first block should be “Gain” for incremental changes needed to get a good signal level

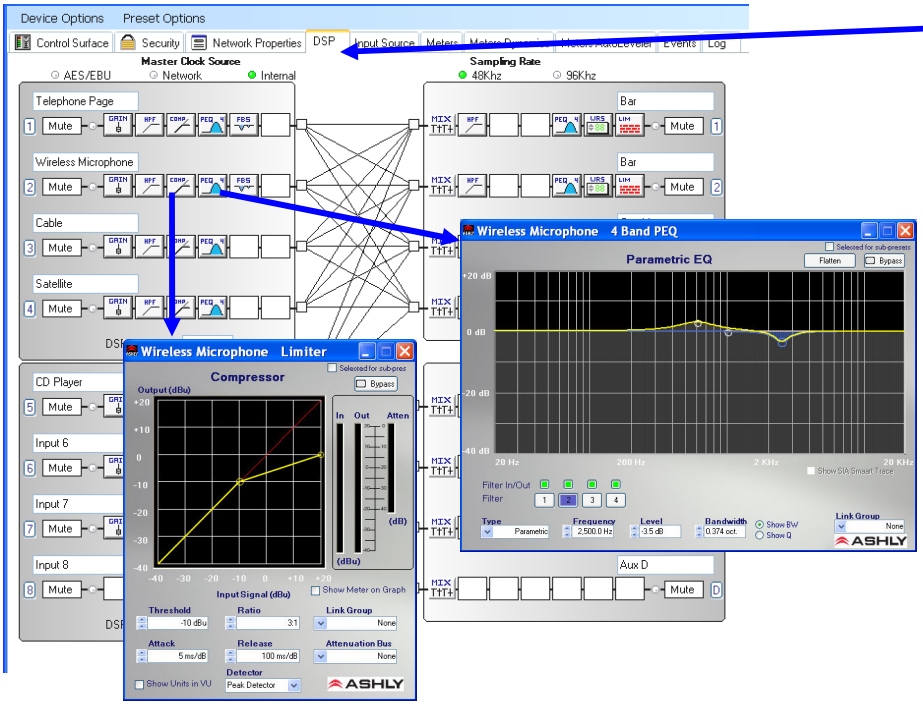
A high-pass filter (HPF) is used to minimize damaging low frequencies

Start with a 40Hz HPF on stereo inputs

150 - 200Hz is a good HPF for most microphones

Visit www.ashly.com to download Protea software and data sheets

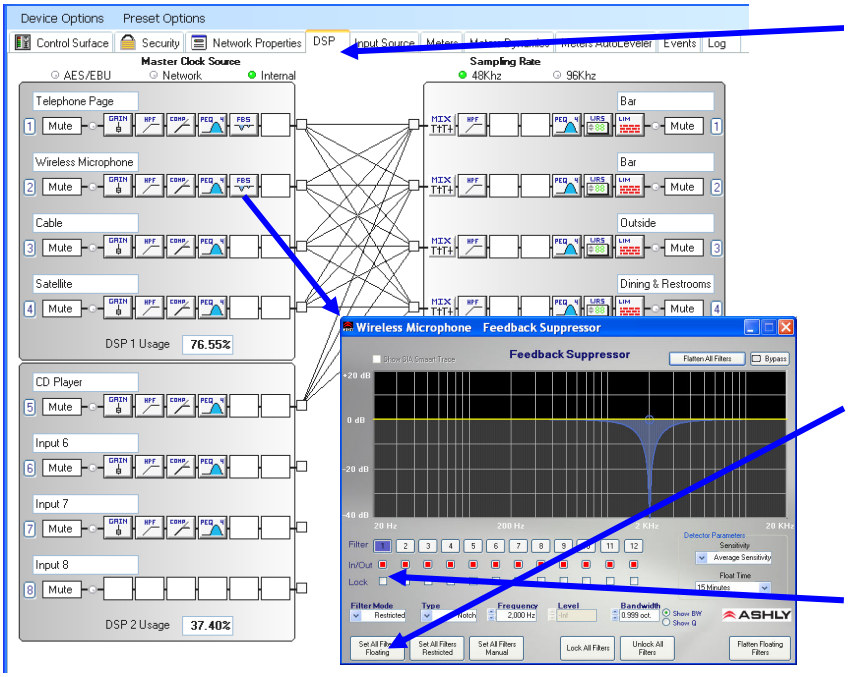
Setting up a DSP processor will be unique to your application.
Here are a few things to consider when setting up your Restaurant-In-A Box system:



Click on the “DSP” tab

Adding a compressor to each input provides peak protection and can help keep vocal mics at a more constant level. Start with a 3:1 ratio and the default attack and release settings. Threshold should be initially set slightly above normal input levels

An equalizer helps to shape the input signal for maximum effect. This example has a small boost around 600Hz to add body, and a cut at 2.5kHz to reduce harshness



Click on the “DSP” tab

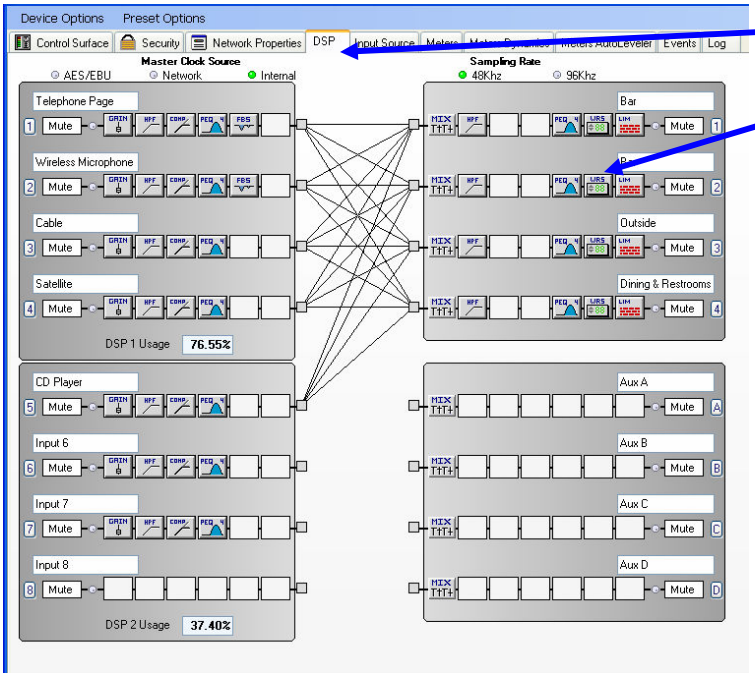
Damaging feedback can occur where a microphone is close to a loudspeaker and turned up. The cause is generally frequency peaks common to the microphone, speaker, and/or the room

Narrow cuts in frequency response are not heard by the listeners and stabilize feedback

Select “Set All Filters Floating” and force the input into feedback using the “Gain” block. The “Feedback Suppressor” will add a notch filter when feedback occurs. Repeat this process until 4 to 6 notches at different frequencies have been assigned.

“Lock” these filters and allow the other filters to float and activate when needed

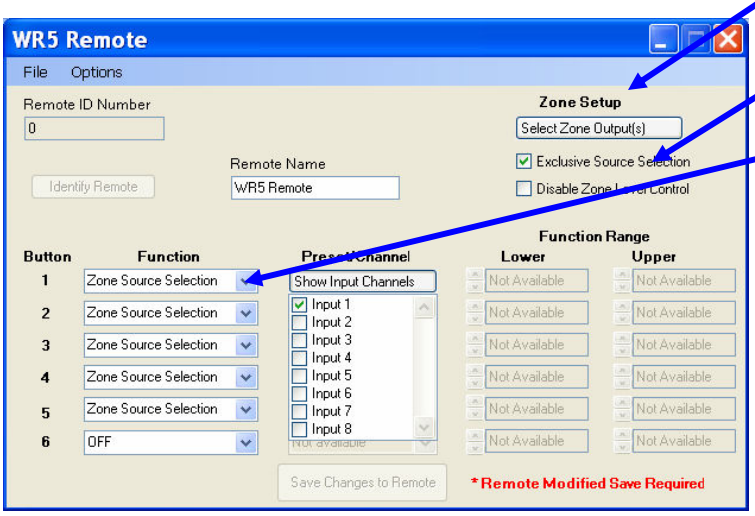
Setting up a DSP processor will be unique to your application.
Here are a few things to consider when setting up your Restaurant-In-A Box system:



Click on the “DSP” tab

Adding a WR-5 block to each of the outputs allows the manager to easily change the audio source and make zone level changes

Labels are used to identify the six main buttons on the WR-5



Open the WR-5 Remote window:

Use “Zone Setup” drop-down to assign this remote to amplifier output 1 & 2
(Channel 1 / Channel 2 checked)

Check “Exclusive Source Selection”
This function selects a source and mutes all others

Select Buttons 1 thru 5 set for “Zone Source Selection” and each button is assigned to a different audio source.

Level changes are made by using the UP-Down buttons on the WR-5 after selecting one of the six main buttons
(automatic result of the “Zone Source Selection” function)

Visit www.ashly.com to download Protea software and data sheets