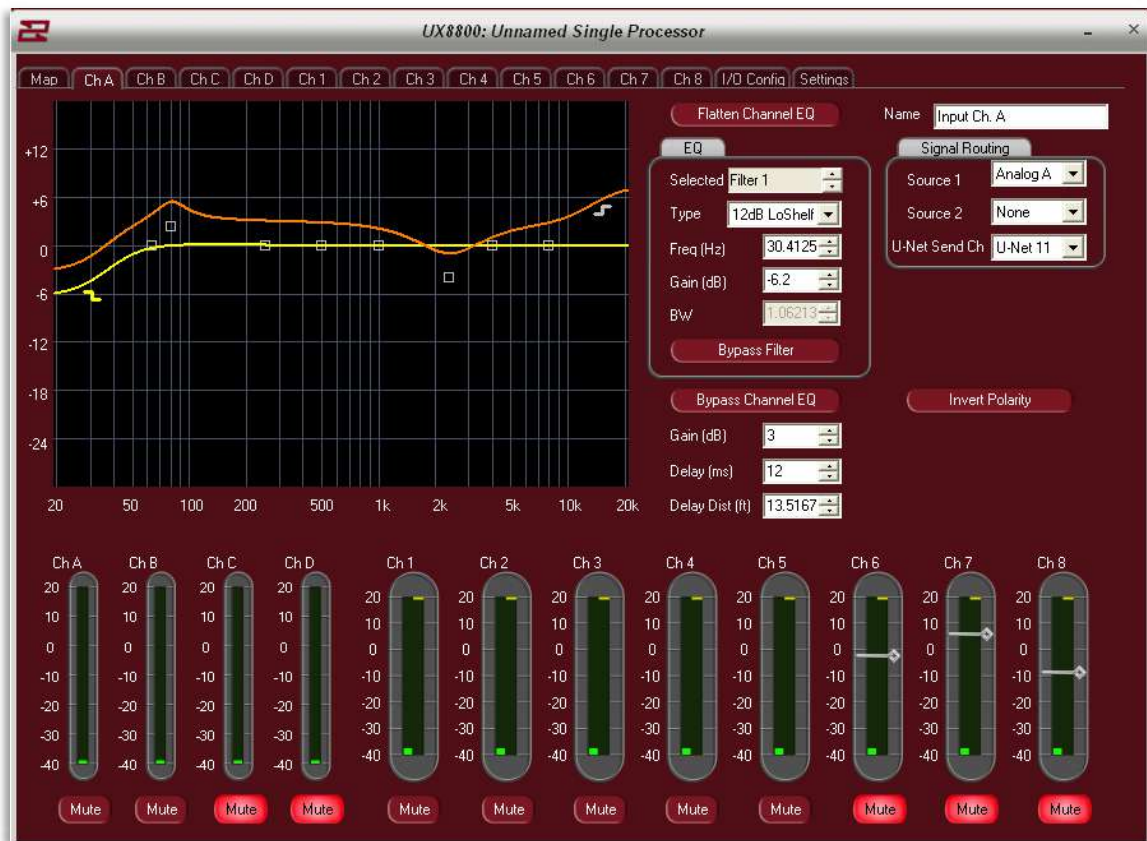


# EAWPilot





## Introduction To EAWPilot™

EAWPilot is an extremely fast and intuitive software created to aid the users of the UX8800, UX3600 + NT products in evaluating, building, storing and recalling complex DSP configurations.

This manual has been created to help end-users step through the various pages and functions of EAWPilot and access all of its powerful features.

## Windows Toolbar Overview

### File Menu



**New** – Creates a new Pilot page. Multiple Pilot pages can exist simultaneously within the software. Shortcut (Ctrl+N)

**Open** – Opens browser to load previously saved Pilot files. Shortcut (Ctrl+O)

**Close** – Closes current Pilot page

**Save** – Saves Current Pilot Page. Shortcut (Ctrl+S)

**Save As** – Allows saving of new file with name assignment

**File List** – Lists recently used files

**Exit** – Closes Pilot.

### Edit Menu



Edit Menu not available until a device has been pulled into the "Design" column (coming up).

## View Menu

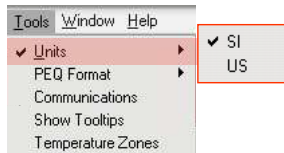


Toggles Windows Toolbar On Or Off

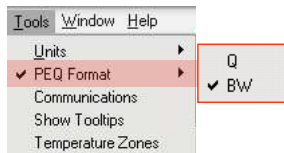
## Tools Menu



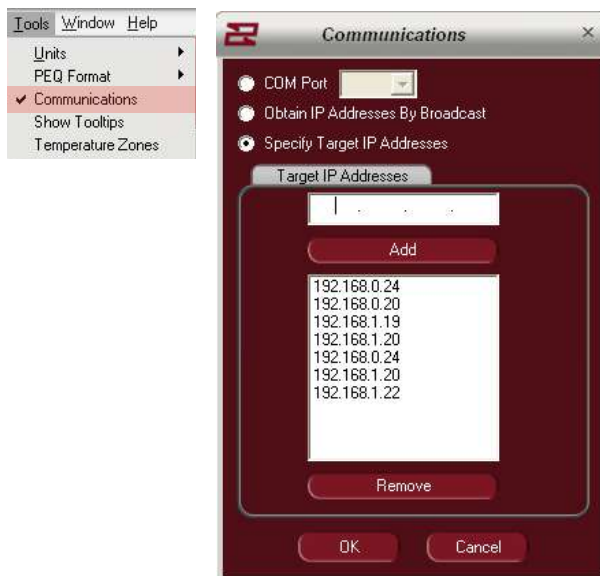
**Units** – Select Between Imperial or Metric measurements



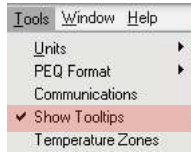
**PEQ Format** – Select Between Q or Bandwidth For Equalization



**Communications** – Opens Communication "Dialog" Box



## Show Tooltips – Interactive tooltips display



## Temperature Zones - Allows multiple temperature / humidity zones to be created



## Window Menu



## Standard Windows Configuration Options

## Help Menu



**EAWPilotHelp** – Opens The EAWPilot Help Files

**UX8800Help** – Opens The UX8800 Help Files

**About EAWPilot** – Displays Version Number Of The Pilot Software (good to keep up-to-date).

**Release Notes** – Updates made to this version

## The Ethernet Connection

### **System Connection via Ethernet**

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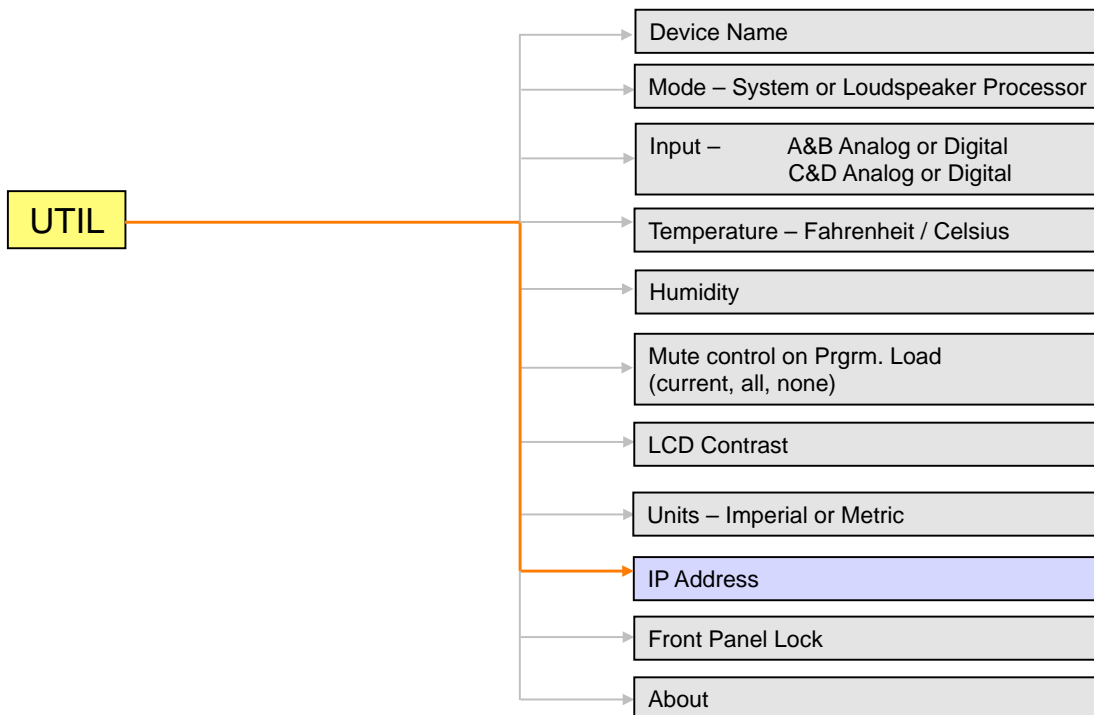
Connection to the UX8800 for laptop control is achieved using the ethernet port on the front of the unit. This port is configured as a standard NIC (network interface card).

- 1) Cable: 8 conductor CAT5e cable or better
- 2) Mating Connector: RJ-45 male
- 3) Cable Configuration: Standard for connection to network hub or switch. Crossover type for direct connection to computers NIC (supplied with unit).

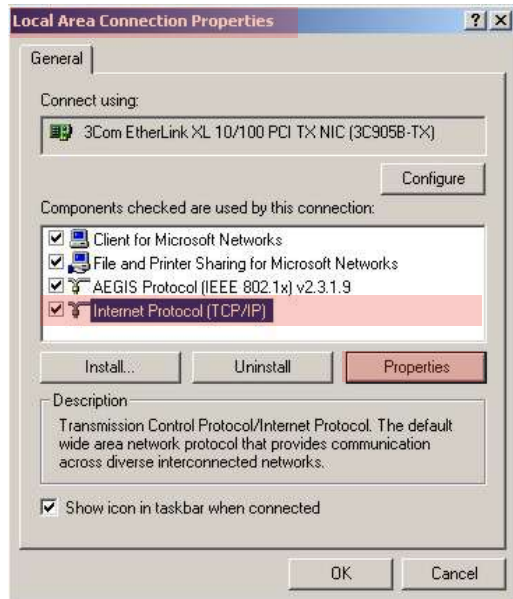
### **Setting The UX8800 IP Address**

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- 1) Prior to connecting to a laptop computer, it is necessary to establish an IP Address on the UX8800 so that it is recognized within the EAWPilot software.
- 2) Entering into the "Utilities" menu on the UX8800 and then "IP Address" will give you access to the feature.
- 3) There will be four sets of numbers available to modify. The first three numbers should be set to 192.168.0. The last number can be set anywhere from 001 through to 256 conforming to a small network protocol
- 4) It is not necessary to set a IP address for every device in the network. As long as the computer is able to connect to the first unit, all subsequent units in the same network will be discovered.

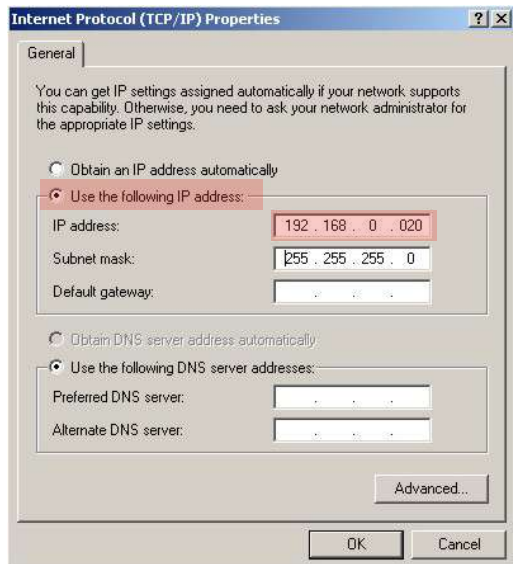


## Setting A Static IP Address

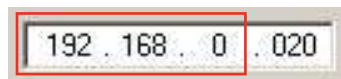


- 1) Locate the “Local Connection Properties” page on your computer (Found Under “My Computer”).
- 2) Go to “Internet Protocol (TCP/IP). Select it and click on “Properties”.

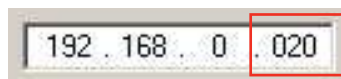
This will open up the IP Properties Page where you can manually enter in a “static” IP Address for your computer communication to the UX8800’s

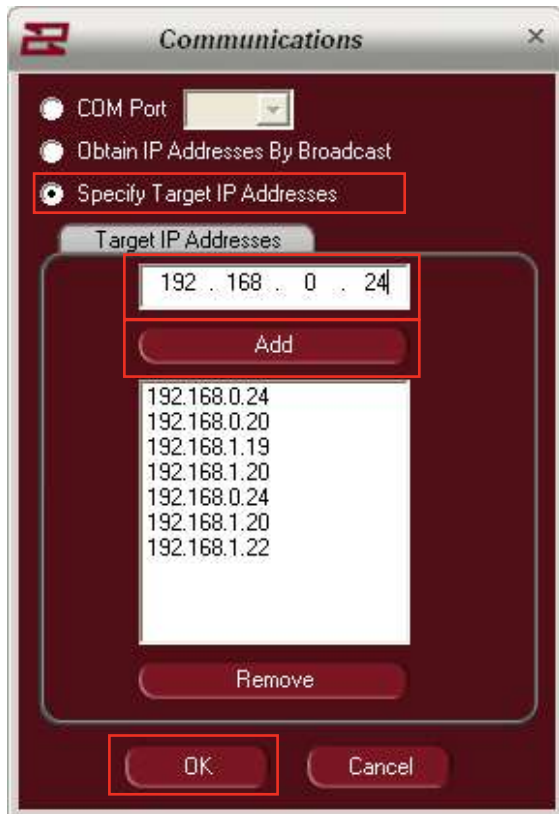


- 3) Your computer will normally have the “Obtain an IP Address Automatically” checkbox selected. We will be setting our own IP Address manually so select the checkbox labeled “Use The Following IP Address.”
- 4) Now you will be able to enter in an address manually. The first three sets of digits must all match what you enter into the EAWPilot software and UX8800 processor(s). Use the number sequences 192 . 168 . 0 in these cells.



- 5) The final number will be the discrete Network IP for the computer and hence the EAWPilot software. The UX8800 must have a different number here (From 001 – 256)





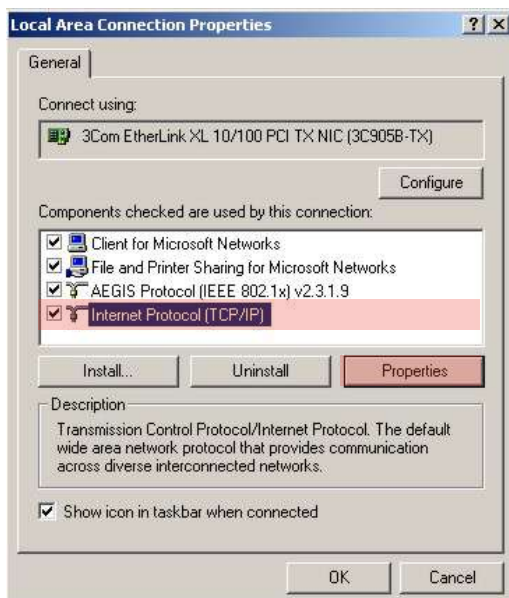
Now that the computer and hence EAWPilot has a static IP Address, the address for the UX8800 or multiple UX8800's must be configured.

- 1) From the EAWPilot homepage, select "Tools" and then "Communications". This opens up the "Dialog" menu within Pilot.
- 2) Check the box for "Specify Target IP Addresses". This puts EAWPilot into Static IP Address mode
- 3) In the Target IP Addresses number string, enter the numbers exactly as you entered them on the UX8800
- 4) Click the "Add" button to enter the IP Address to the list. Then click "OK" to identify that this is the IP Address that the computer will use to communicate to the UX8800

Note: Multiple addresses can be entered in this column for recognition from EAWPilot but it is best to remove any unnecessary addresses as EAWPilot will continue to search for them.

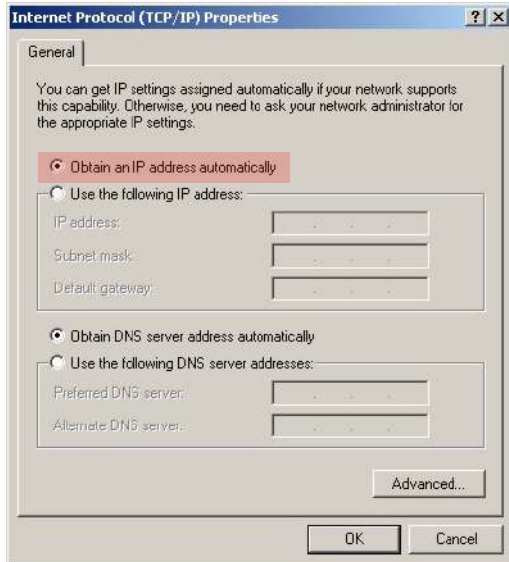
### **Setting A Dynamic IP Address**

If you plan on using or installing multiple UX8800's, you may want to consider using a Ethernet hub which will act as a DHCP server and automatically configure IP addresses as long as the computer and UX8800's are set to dynamic mode.



Another option is to use Ethernet to communicate to the first unit and then U-Net to communicate to the others.

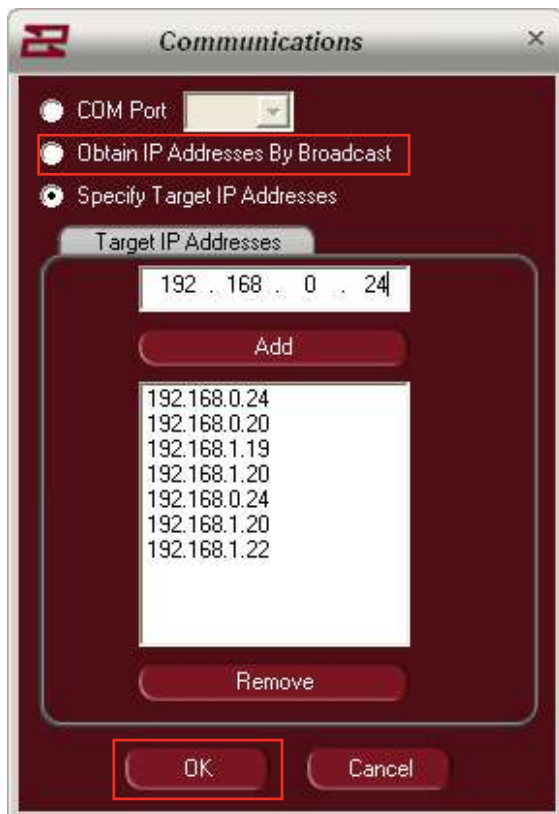
- 1) Locate the "Local Connection Properties" page on your computer (Found Under "My Computer").
- 2) Go to "Internet Protocol (TCP/IP). Select it and click on "Properties".



- 3) By default, most computers will already have the "Obtain an IP address automatically checkbox checked. If not – check it.

The computer is now set to communicate with a Network Hub and obtain IP addresses through the hub automatically.

Now that the computer is set to receive IP Addresses automatically, we must configure the EAWPilot software to do the same



- 1) From the EAWPilot homepage, select "Tools" and then "Communications". This opens up the "Dialog" menu within Pilot.
- 2) Check the box for "Obtain IP Address By Broadcast". This puts EAWPilot into dynamic IP Address mode. Then press "OK" to confirm your selection.

No other changes are necessary. When the EAWPilot software is set to poll for connected devices, the network hub will automatically designate IP Addresses to any connected units.

## EAWPilot Homepage



The "Device Library" page is a listing of all supported hardware within the Pilot software. These "virtual devices" can be used for building settings off-line and downloading to connected units later.



The button marked "online" brings EAWPilot online to any connected units. This will initiate the polling process as the software searches for connected devices.

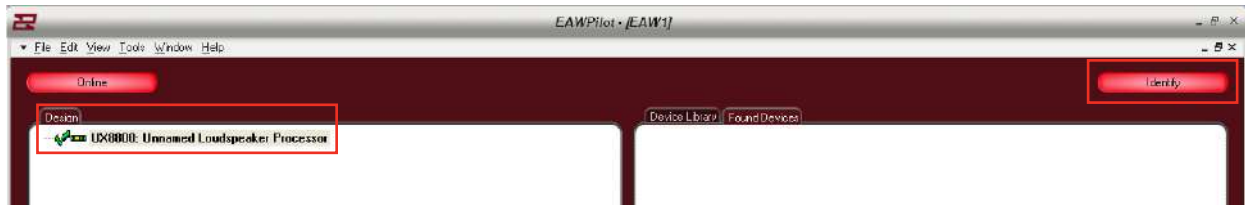


When the polling process is complete, connected units will be listed under "Found Devices".



To begin the design process, a found device must be dragged over to the "Design" column of the page. This is accomplished with a left-click and drag from your mouse.

The exclamation point will turn into a "check" when the software has confirmed that communication to the UX8800 is ready.



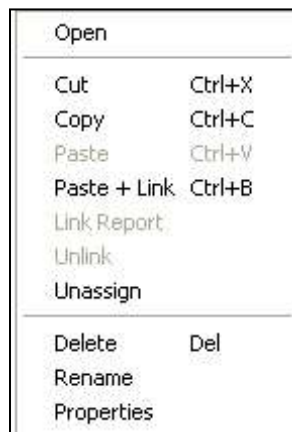
By highlighting a unit in the design column and then selecting the “identify” button, you can visually match the hardware to the software as the output buttons on the physical UX8800 will scroll left and right. Other U-Net capable devices may show this in a different manner.

## Linking UX8800's



If so desired, an entire UX8800 may be linked to another. Using this option greatly speeds up the time it takes to program (e.g. House Left and House Right linked).

The linking process follows a hierarchy. Right click on the upper UX8800 to open the options menu.



**Open** - Opens the Processor Page for the selected UX8800

**Cut** - Removes the selected UX8800 from the Design List

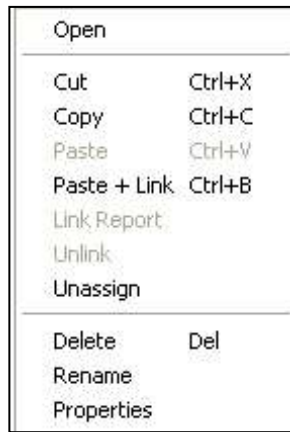
**Copy** - Copies all parameters of the selected UX8800

**Paste** - Pastes all parameters to another selected UX8800

**Paste + Link** - pastes all parameters to another selected UX8800 and links the devices for all future parameters

**Delete** - Deletes selected UX8800 from the Design Column

**Rename** - Allows the UX8800 to be renamed



**Link Report / Unlink** - Only available when UX8800's have already been linked

**Link Report** - Opens link report feature

**Unlink** - Unlinks the selected UX8800



**Processor** - Name of linked processor

**Channel** - Channels linked (All)

**Linked Control** - Specific functions that have been linked

**OK** - Confirm and escape the link report

**Unlink** - Unlink a selected parameter or channel

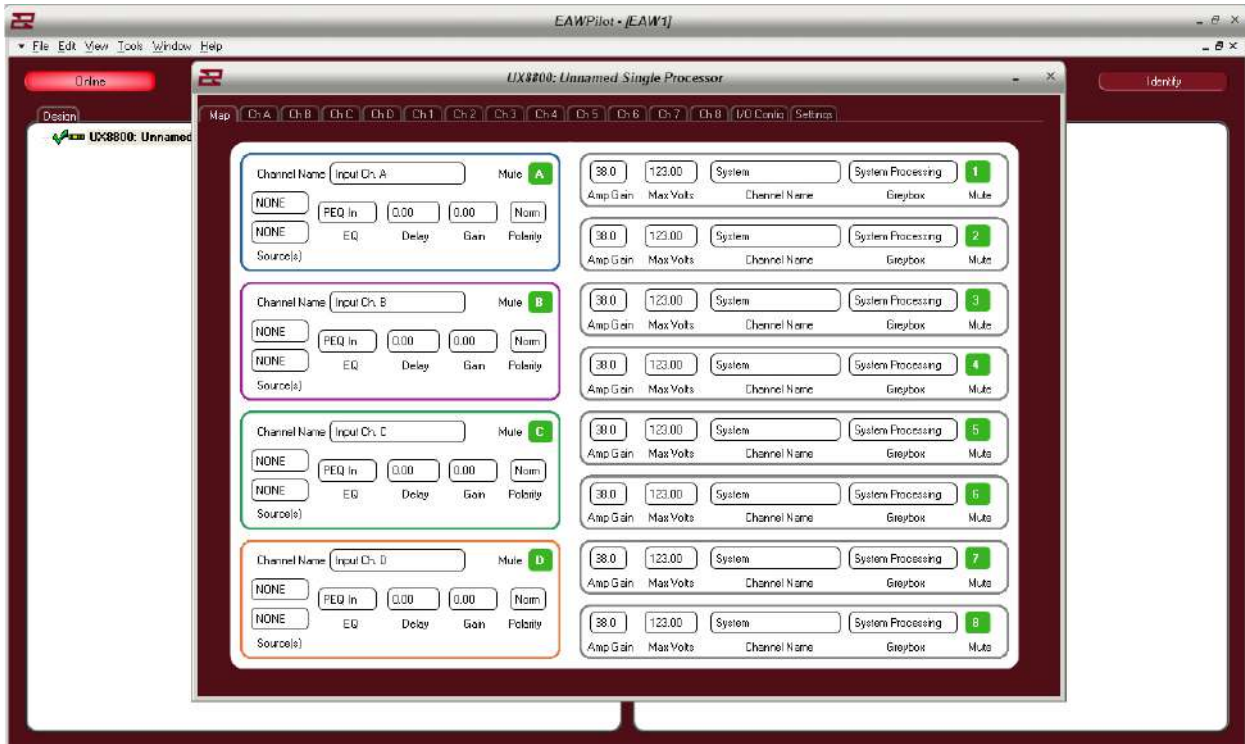
**Unlink All** - Unlink all channels and parameters

Note: Other linking options are available within the EAWPilot map windows

## The Map Page

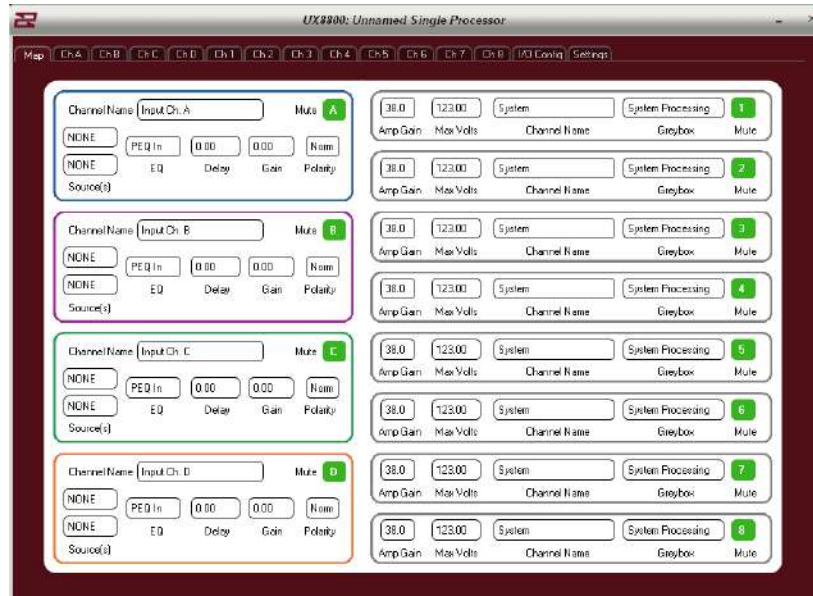


Double-clicking on any unit listed in the "Design" column will open its associated Map Page



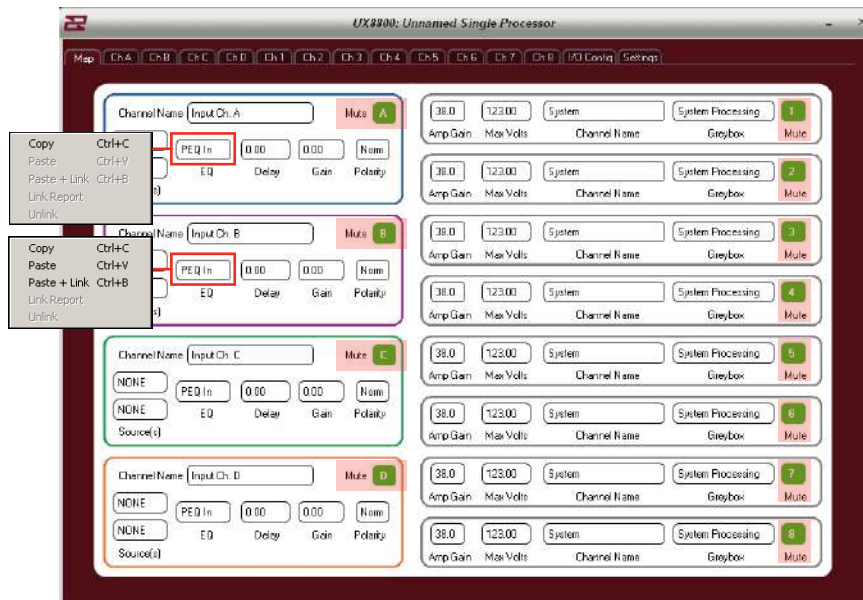
The UX8800 and Pilot communication is duplexing meaning that changes made via computer update the unit immediately while changes made on the unit will update the software immediately.

## The Map Page

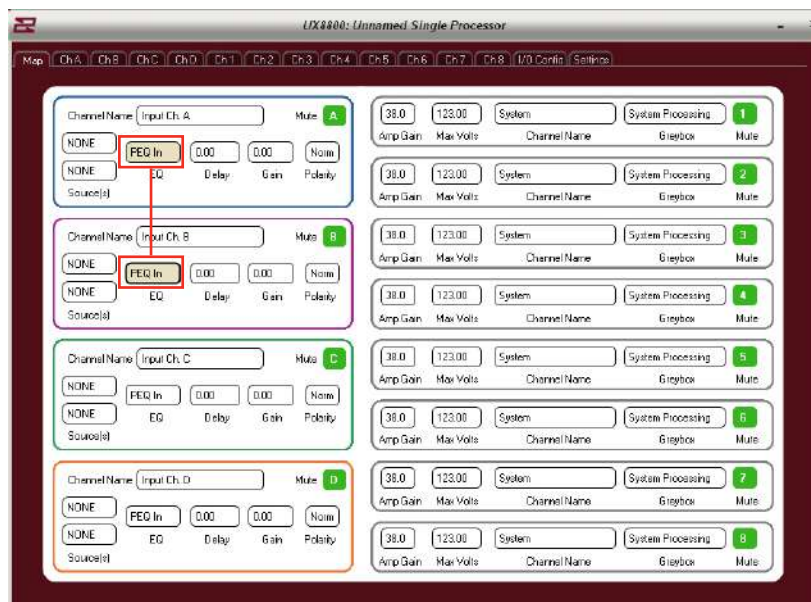


The “Map” page of the Pilot software gives the user an overview of the UX8800’s setup. While double-clicking on most of the boxes in the map screen will take the user to an associated page, there are a couple of functional buttons and menus directly on the map page.

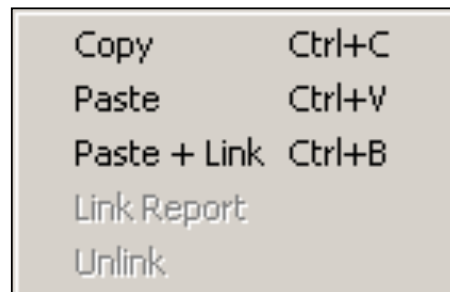
## Map Page



The mute buttons are all functional on the map page. You can also right click over any of the buttons to copy and paste settings to another channel of the processor. This is especially helpful when matching identical parameter layouts to other channels of the device. Simply right click over the button, select copy, right click over the destination of the parameters and select paste. You may also link the two channels at this stage so that any changes made to one channel will automatically be copied to the other channel.



Parameters that are linked will turn tan in color as an indicator to the operator that changes made to one channel will also be applied to the other. All 4 input channels of the UX8800 may be linked if desired or any portions of the input channels.



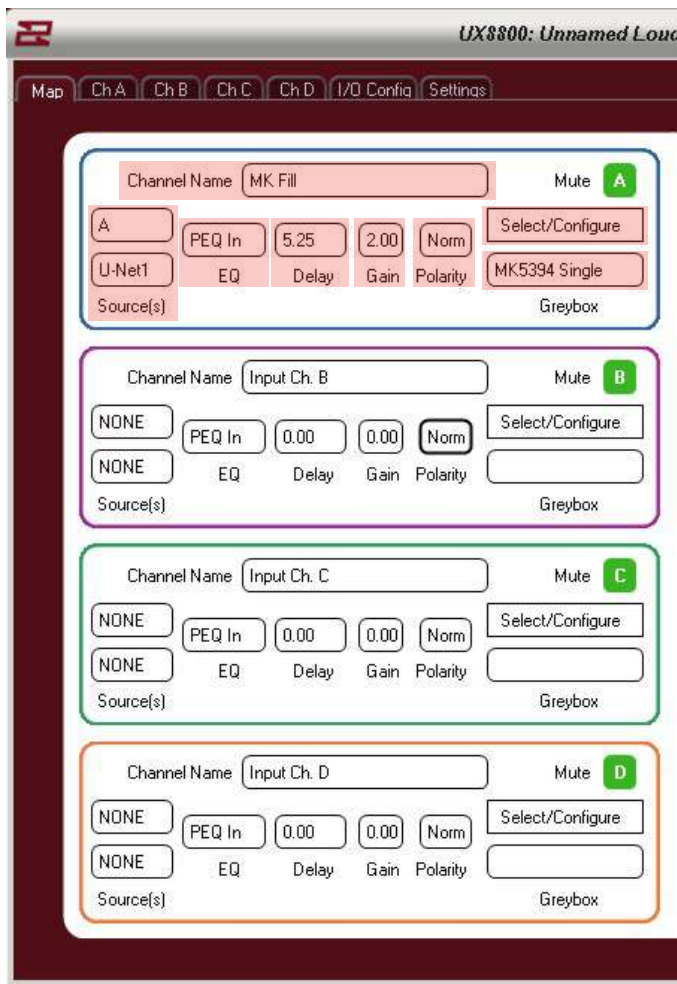
**Copy** – Ctrl+C – Stores all parameters in a temporary memory buffer

**Paste** – Ctrl+V – Pastes these parameters to the destination

**Paste+Link** – Ctrl+B – Copies parameters and also links the feature

**Link Report** - Opens link report page (shows what links have been made)

**Unlink** – Unlinks the particular channel from the other



## Channel Name – User Defined on input tabs

Channel Name

## Source of Input x 2

Source(s)

## EQ in or out?

EQ

## Delay - Pre-delay applied (if any)

Delay

## Gain

Gain

## Polarity Normal Or Reversed?

Polarity

## Greybox Selected

Greybox

## Shortcut to Greybox page



## Amplifier Gain

Amp Gain

## Amplifier maximum voltage output

Max Volts

## Channel name (defined on I/O Config page)

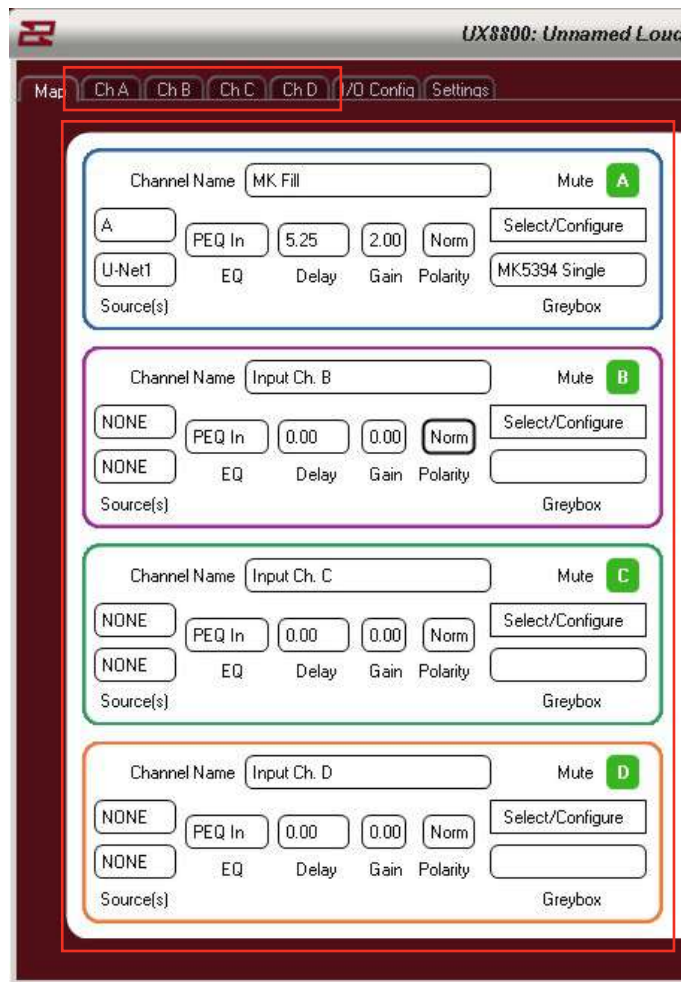
Channel Name

## Greybox Applied

Greybox

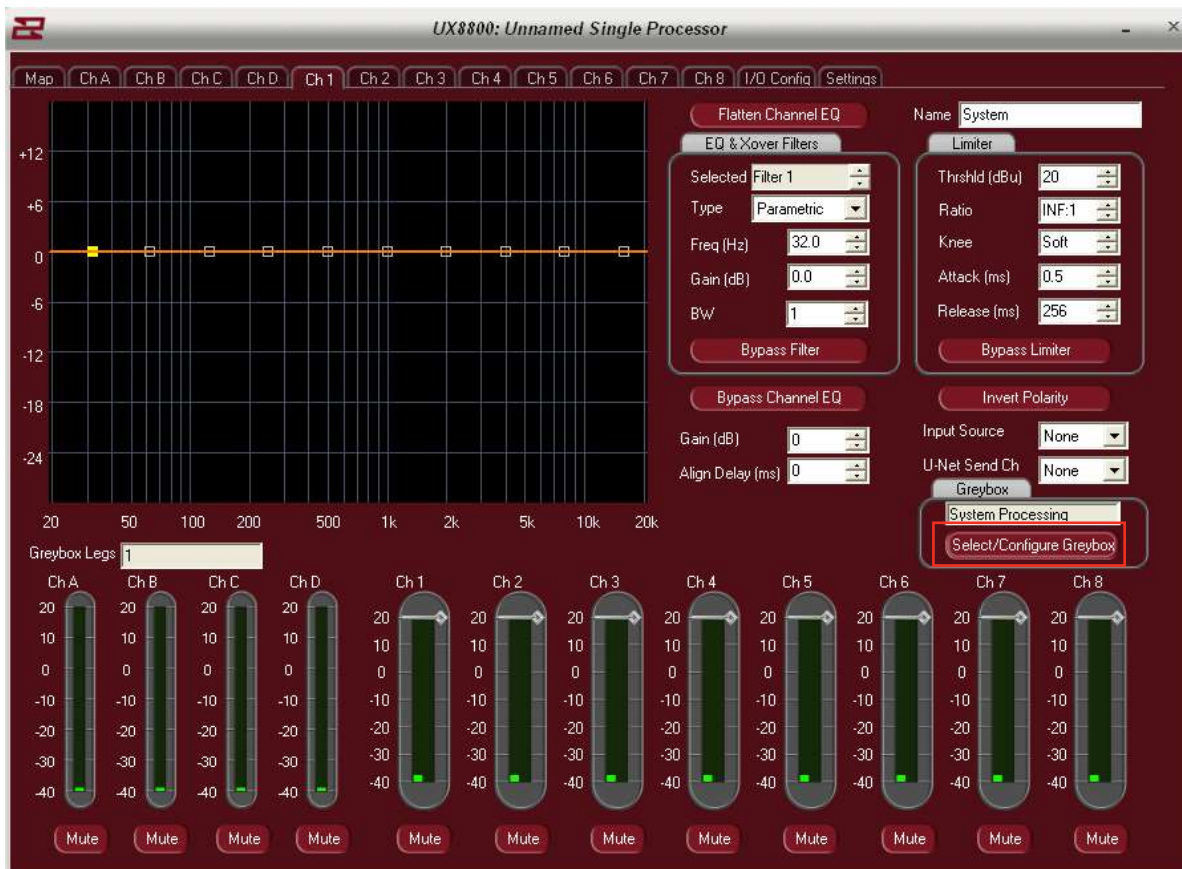
## Mute (toggle on or off)

Mute



Any of the 4 input channel tabs can be accessed either by double-clicking within their respective Map areas or by selecting the channel via the tabs at the top of the page.

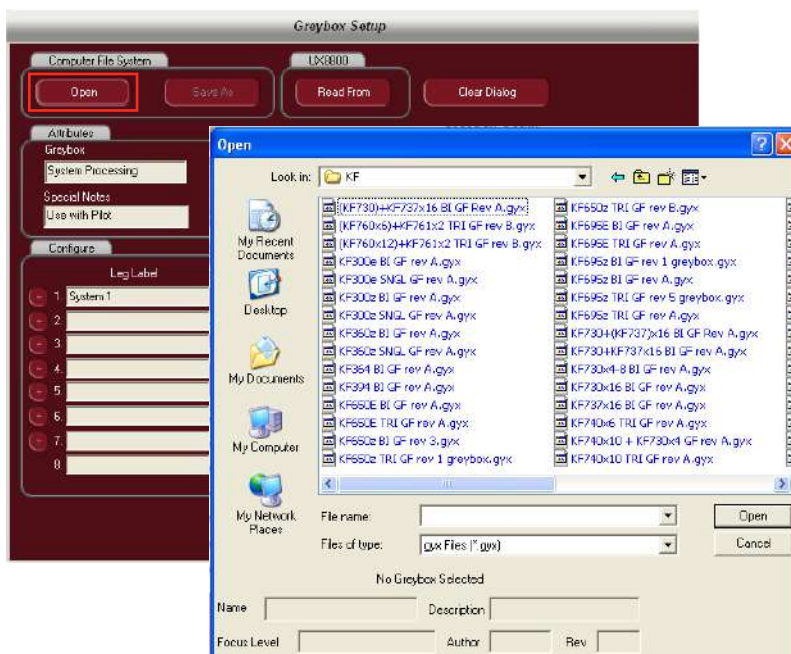
## Configuring A Greybox



By default, the Pilot software will launch a completely open processor allowing the user to enter in his own parameters.

Since we are choosing to use EAW factory presets, we must load a preset into the software and UX8800, starting with one of the processors empty output channels..

Click on the button marked: Select / Configure Greybox



To browse for a greybox file, click on the "Open" button

This opens the greybox browser allowing the user to select from dozens of preconfigured greybox files. Select the appropriate file for your application and click "open" to open the file into EAWPilot



The selected greybox file (in this case a KF740 x 6) is loaded into the software  
 Before the greybox can be considered “optimized”, there are a few parameters to adjust.  
 “Attributes” describes the greybox that you have selected (not adjustable)



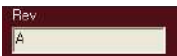
Title Of Greybox



Focus Level (not all greyboxes are Focused. These are labeled as “Legacy” greyboxes)



Greybox revision number



Any notes associated with the greybox



Creator of the greybox

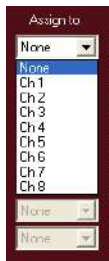


The various legs of the greybox will be listed under “Leg Label”. The layout of these legs cannot be changed.



Note: Greybox legs can be duplicated to open leg channels. If the user wants to create for example, an extra HF output for the 740’s, simply click on the + button to the left of the menu and that particular leg will duplicate itself to the next available leg.

The legs must now be assigned to outputs on the UX8800. Use the dropdown menu to select from outputs 1-8 (note: as an output is used up, it will disappear from the output dropdown menu)



Note: Even though the legs for the greybox are listed, they do not necessarily have to be used. If any portion of the greybox is not required, do not give it an output assignment and the leg will remain dormant. You may now use this output on other input channels.

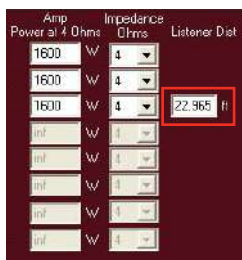
A critical step in properly configuring the greybox is entering in the appropriate information for amplifier gain and amplifier max voltage.



Amplifier gain information is needed for the UX8800 to properly align bands through crossover. Upon startup, these "Amp Gain" cells will be blank.

Amp Max Voltage is needed to properly calibrate the UX8800's limiters. The user must enter in the load being presented to the amplifier and either the max voltage to be applied at that ohmage or the max watts available at that ohmage for that particular amplifier.

The final step in configuring the greybox is adjusting the listener distance to update the air-loss compensation feature on the UX8800.



The air loss compensation is a HF tapering filter that tailors the HF response based on listener distance, temperature and humidity

Set the listener distance to the closest listener in the zone. If the listener distance is set too far back in the zone, the HF compensation may be a bit much for the people that are closer. It is more acceptable to have some dropoff of HF response.



If cells are left blank, the software will warn the user with either color coded displays or with pop-up warnings that something is not correctly filled in.

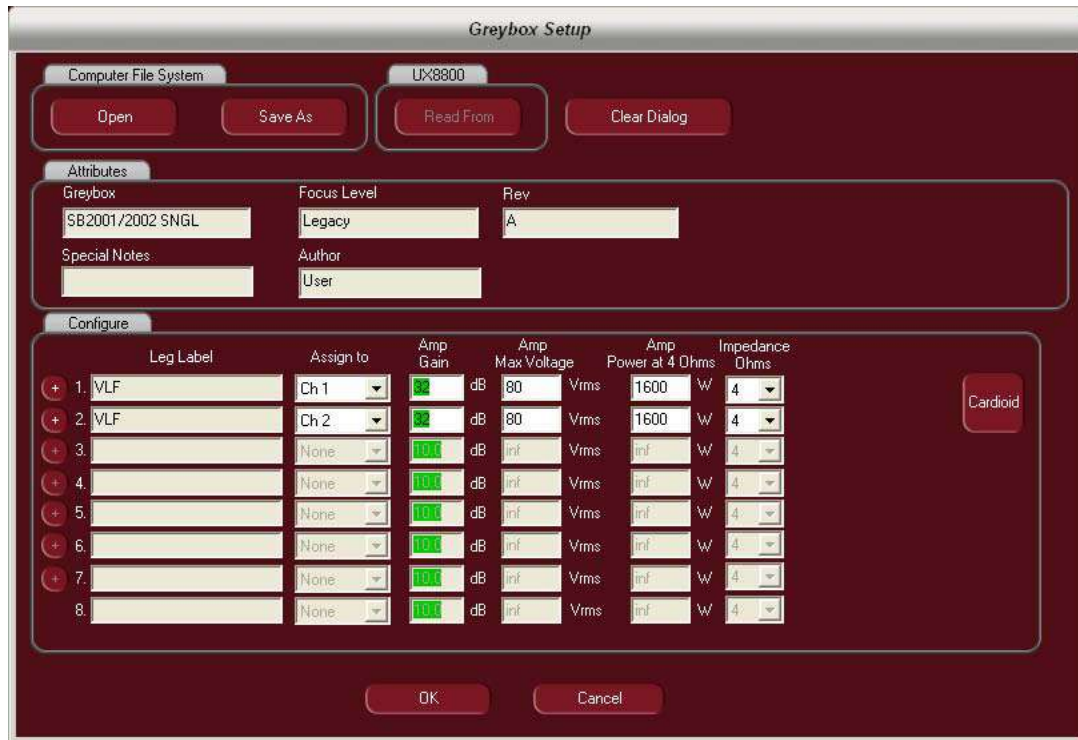


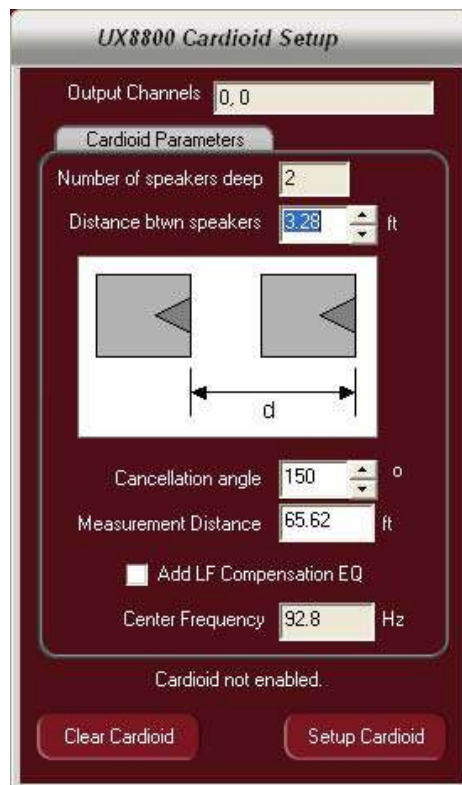
If there are previously stored greyboxes on the UX8800 that you would like to access, click on the "Read From" button to access them.



The currently selected greybox can be cleared from Pilot by clicking on the "Clear Dialog" button.

If the user wishes to take advantage of the "Cardioid" feature contained in EAW Pilot, simply load one subwoofer greybox and use the + (plus) button to add another and fill in the cells to configure the greybox. This will open the cardioid feature.





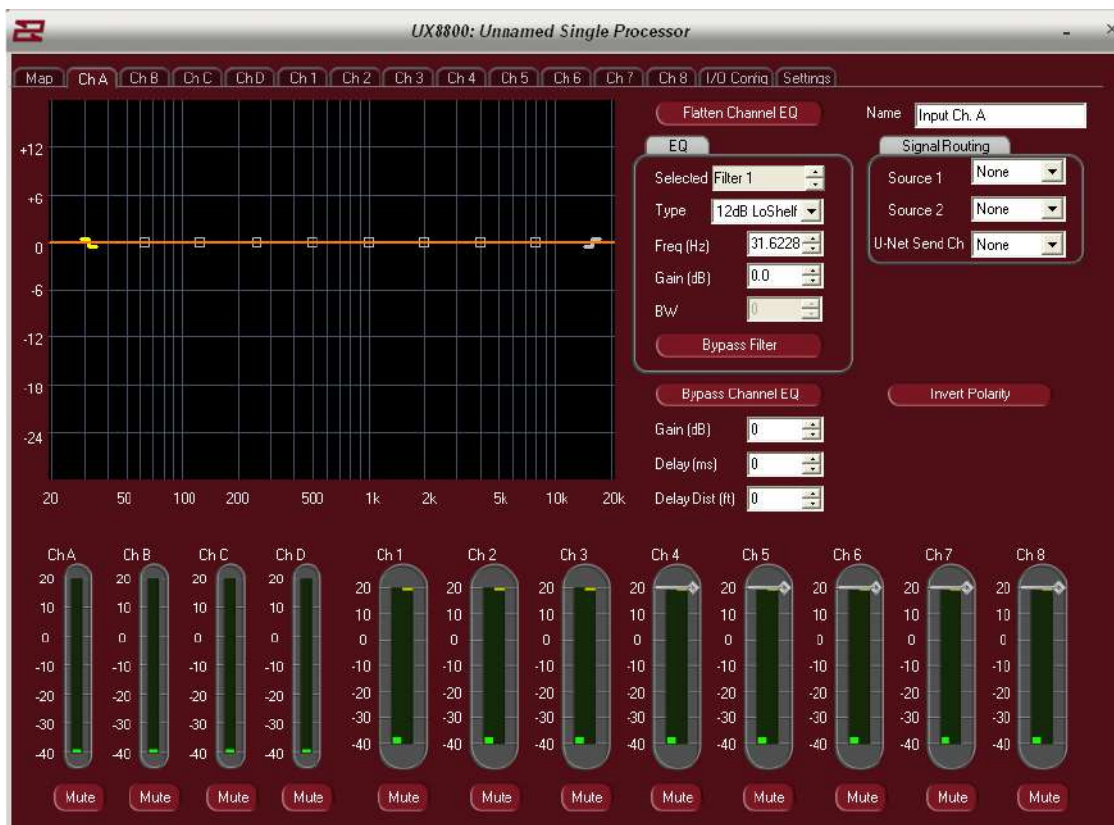
Configuring the cardioid feature:

Once the user has configured the subwoofers on the greybox “setup” page, they will be able to align these subs to create a cardioid effect.

1. Determine the distance from the face of one subwoofer to another. The legend on the feature is your guide to determining this. The spacing must be equal regardless of how many subs deep the arrangement is.
2. Set the cancellation angle. This tells the software how wide or narrow you wish the forward coverage of the subwoofer array to be.
3. Measurement distance – if close to the array, the angle changes. This parameter is used to adjust the cancellation angle accordingly.
4. LF EQ Compensation – EAW’s technique for creating a cardioid does so at all frequencies but also creates a 6 dB per octave roll off in the extreme low end below the center frequency. This selection box applies a +4dB compensation EQ to make up for this loss.
5. Center Frequency – Sets the center frequency below which the LF Compensation EQ will be applied.
6. Once the data has been entered, hit the “Setup Cardioid” button to create the pattern (note: even though the delay times are not displayed in Pilot for the Cardioid, it has been implemented)
7. Hitting the “Clear Cardioid” button cancels the feature.

## Equalizer / Gain / Delay

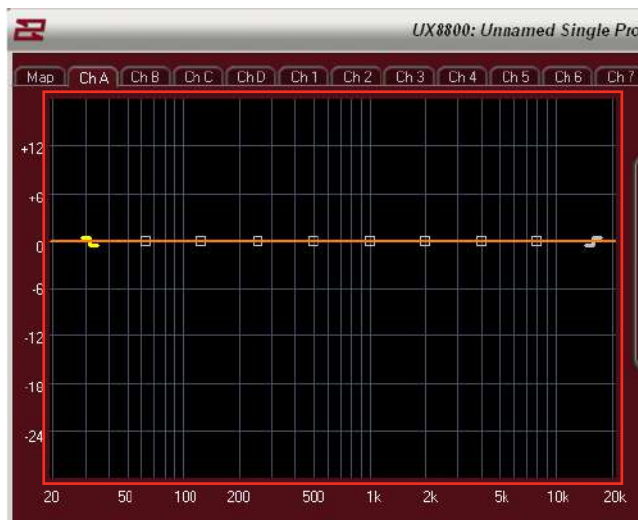
### Direct Value Adjustment



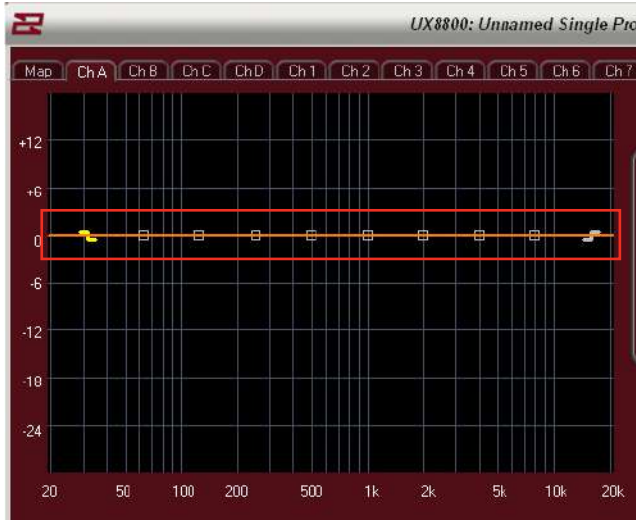
Once a greybox is installed, equalization for the channel is done on its input processor tab (A,B,C,D). EAWPilot allows two different methods for setting equalizers. The user may elect to manually type in all of the EQ parameters or use the associated spinners to set parameters. Alternately, you may also use the drag and drop method within the graphical display to set EQ points.

Note: The drag and drop method can be used for coarse adjustment and then fine tuned using the spinners or by manually typing in a value.

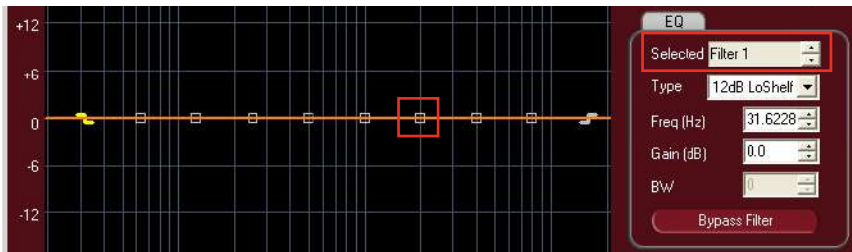
### Graphical Display Area



## EQ Points (10 available + LPF and HPF)



Select Filter to modify or click on a square within the Display area.



Select Filter Type by using dropdown menu



Adjust the Frequency of the Filter (20Hz – 20000Hz)



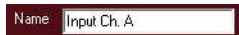
Adjust The Gain Of The Filter (+/- 15dB)



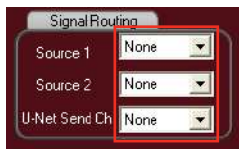
Adjust the Width of the Filter using Q or BW (adjusted under tools menu)



Alter the name of the input channel here



If desired, the input source(s) can be changed here by using the dropdown menus



The polarity of the channel can be inverted by clicking on this button.



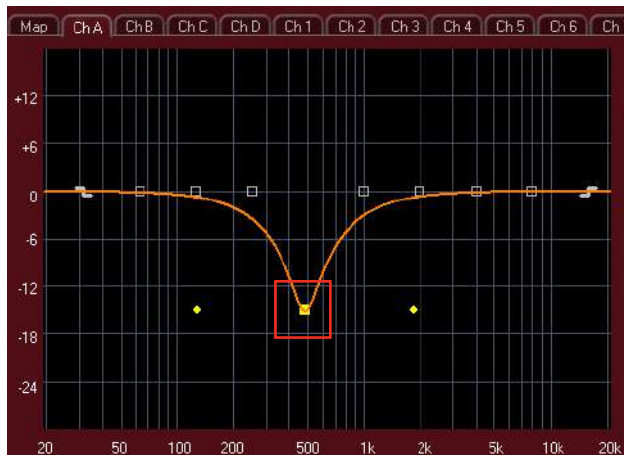
### Drag And Drop Adjustment

From any of the greyboxes output tabs, left click and drag the slash mark to alter the high pass filter.

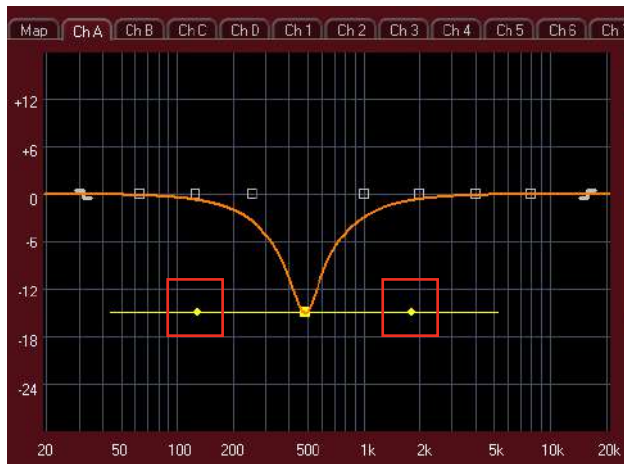
Note: Once the HPF has been dragged, the software will automatically switch the slope from a 12dB Butterworth to a 24dB Linkwitz-Riley. The L/R filter has better integration properties than the Butterworth for adjoining to subwoofers.



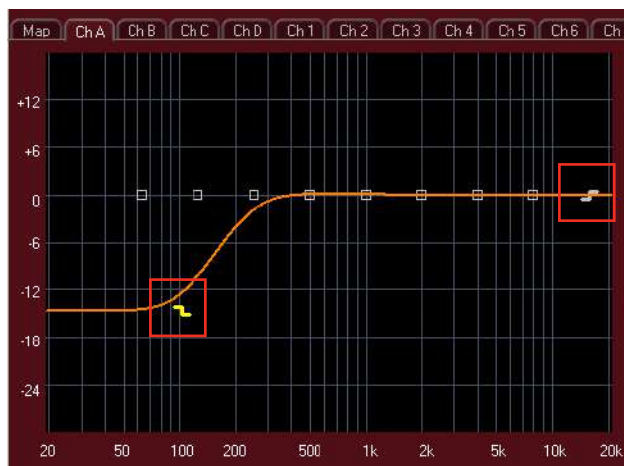
On the input tab for the greybox, left clicking and dragging the squares will implement the available 10 parametric EQ's.



Left click and drag the small yellow dots flanking the EQ and move left or right to adjust the Q of the filter.



Left click and drag the Z marks to alter the Lo or Hi shelving filters.



Bypass the selected filter by clicking the "Bypass Filter" button.



Bypass ALL EQ's by clicking on the "Bypass Channel EQ" button.



The entire EQ set can be returned to flat with a couple of simple clicks.

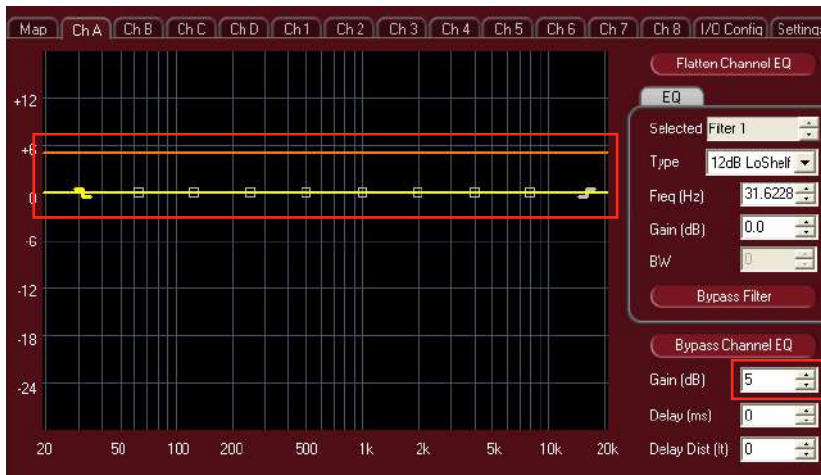


First click on the "Flatten Channel EQ" button



The software will warn you that you are about to lose all of your equalization for that channel.

If this is your intention, click OK or press cancel to go back to the input screen.



Use the spinner to adjust the gain of the input signal (-99 to +15 dB)

The adjustment is visualized by movement of the orange bar within the graphical display area.

Up to 1200ms of delay is available to each input channel. Use the spinner to adjust the delay or simply type the value directly into the box.

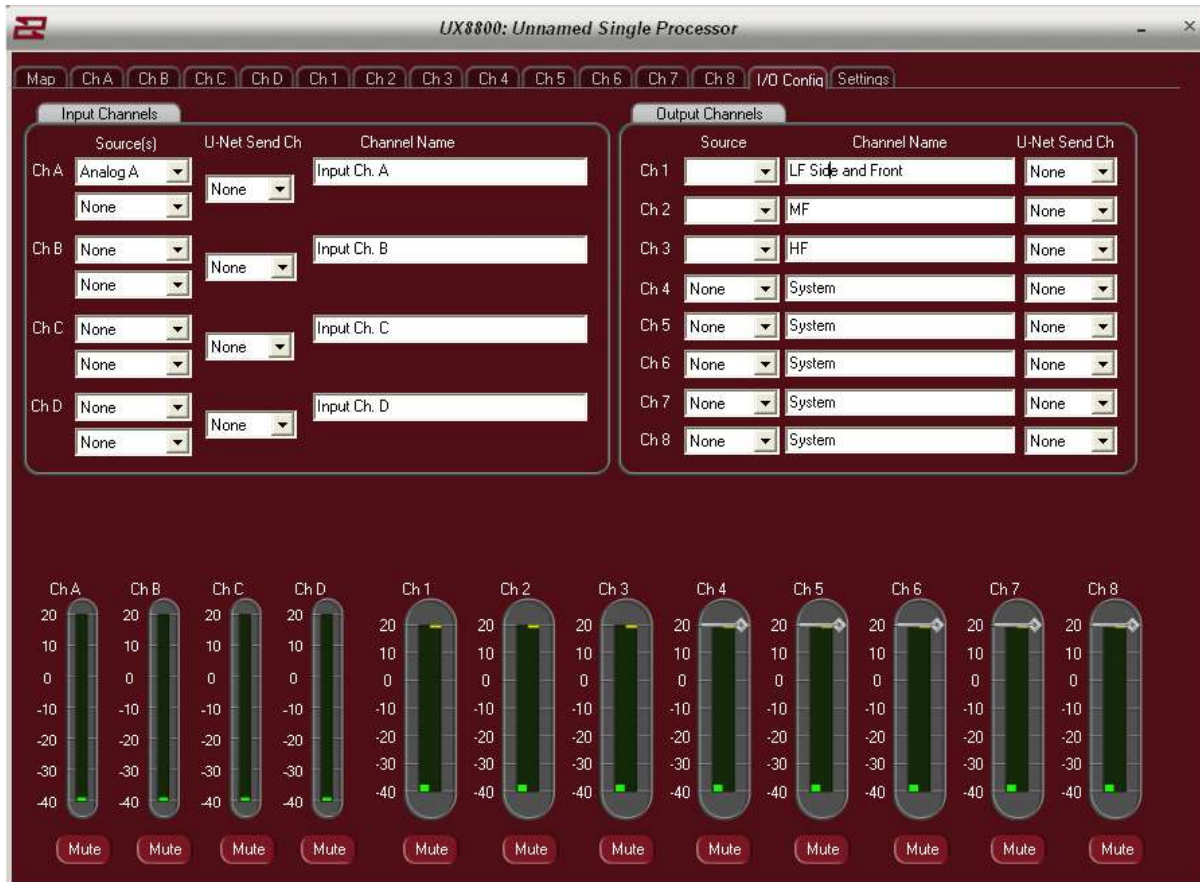


Alternatively, you may want to enter in delay as a function of distance? Use the spinner or direct value input to alter the distance value (up to 412m)



## I/O Configuration Page

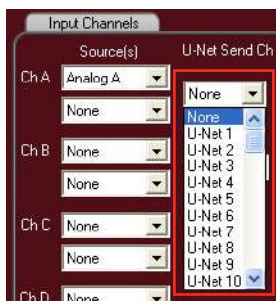
The I/O Config page is designed to allow the user to easily access input as well as U-Net assignments for the UX8800. It is also the place to enter in names for both the input and output channels of the UX.



Using the dropdown boxes, select up to 2 sources for each input of the UX8800.



Note: The physical connections to the back of the UX8800 do not necessarily have to follow through to the processor. For example, you may have a signal coming in on the physical D input connector on the back of the processor. On the I/O Config page, you can have this physical input feed the A input of the processor.



If desired, the input can now be sent on to other U-Net capable devices via the connectors on the rear of the UX8800. Up to 64 Channels of U-Net are available

Input and Output names can be changed on the I/O Page by clicking in their respective title boxes.

The screenshot displays the 'I/O Config' page of the UX8800 software. The window title is 'UX8800: Unnamed Single Processor'. The interface is divided into several sections:

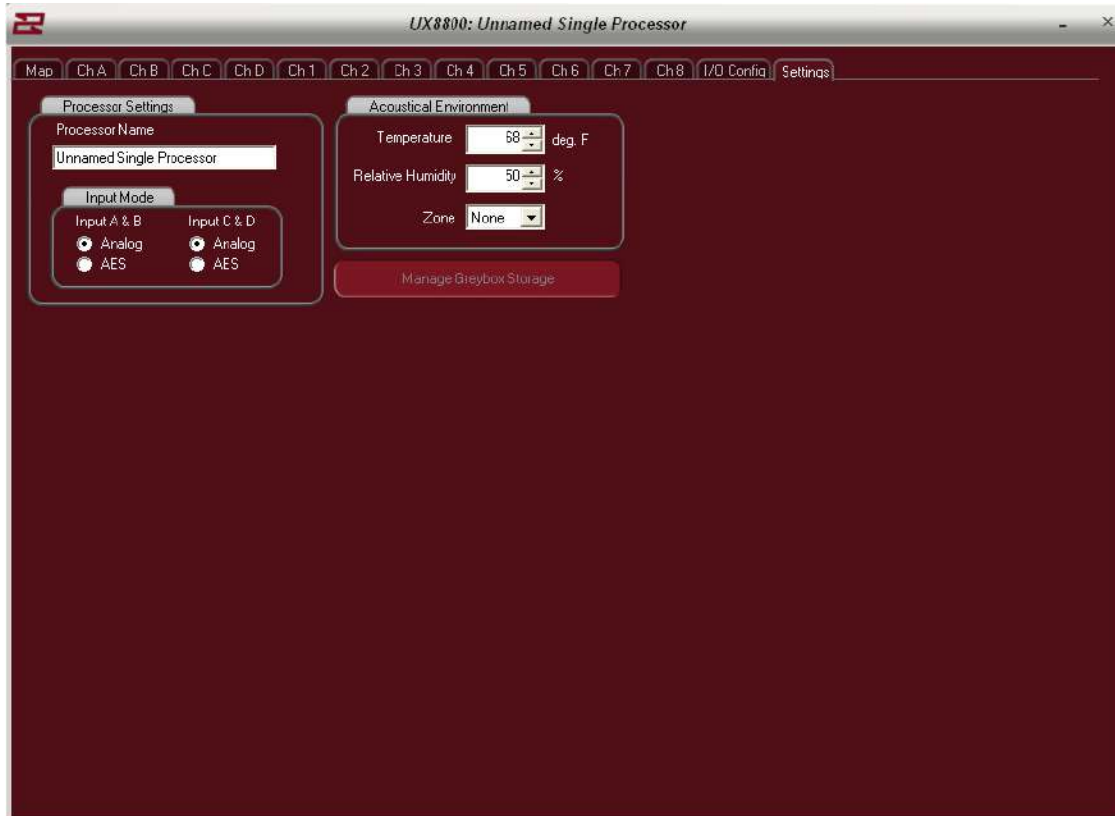
- Map:** A row of tabs for channels Ch A through Ch 8, and 'I/O Config' (selected) and 'Settings'.
- Input Channels:** A table with columns for Source(s), U-Net Send Ch, and Channel Name. The 'House Left' title box is highlighted with a red rectangle.
- Output Channels:** A table with columns for Source, Channel Name, and U-Net Send Ch. The 'KF740 Taxi Drivers' title box is highlighted with a red rectangle.
- Mixer:** A row of 12 vertical level meters for Ch A through Ch 8, each with a 'Mute' button below it.

Channel	Source(s)	U-Net Send Ch	Channel Name
Ch A	Analog A	None	House Left
Ch B	None	None	House Right
Ch C	None	None	House M.D.
Ch D	None	None	Apartment

Channel	Source	Channel Name	U-Net Send Ch
Ch 1	Ch A	KF740 Bass Drivers	None
Ch 2	Ch A	KF740 Mid Drivers	None
Ch 3	Ch A	KF740 Taxi Drivers	None
Ch 4	None	System	None
Ch 5	None	System	None
Ch 6	None	System	None
Ch 7	None	System	None
Ch 8	None	System	None

## Settings Page



Rename the UX8800 to any name desired here (e.g. House Left)

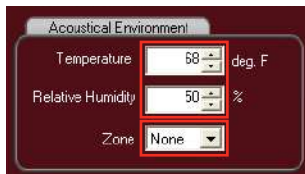


Convert the 4 inputs of the UX8800 from analog to digital here



(Note: A&B – C&D combine when AES is selected)

Enter in the current temperature and relative humidity of the current environment to calibrate the high frequency compensation feature.

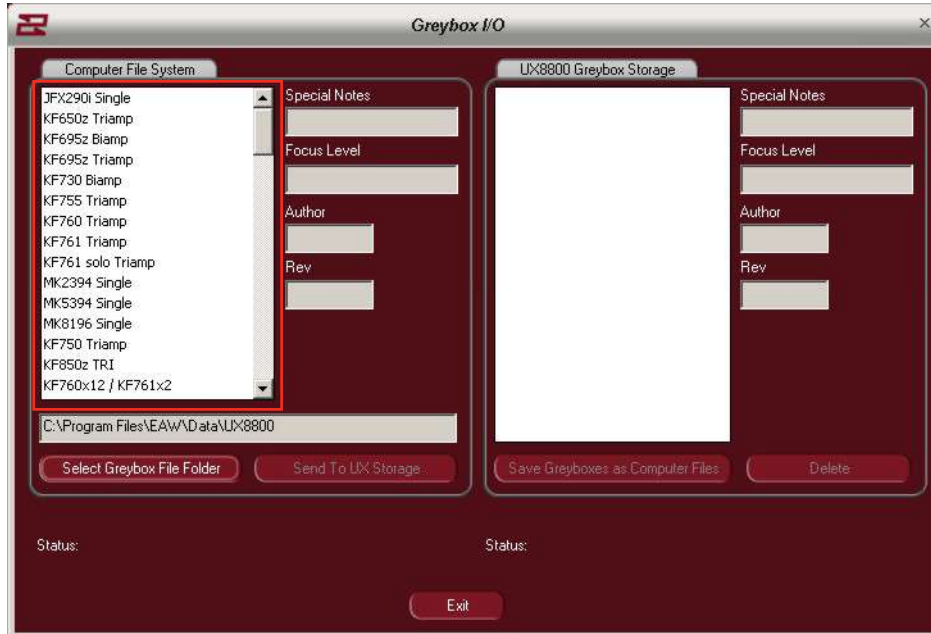


Select from 5 different predetermined temperature / humidity zones.

The “Manage GreyBox Storage” feature is used to transfer GreyBoxes from file locations on your PC to the UX8800 or retrieve Greyboxes from a UX8800 to store on your PC. Click here to open this feature



List of Greyboxes in the currently selected file folder from your computer.



Location of the files on your PC



Attributes of the currently selected GreyBox



Browse your computers file system for other GreyBoxes to recall



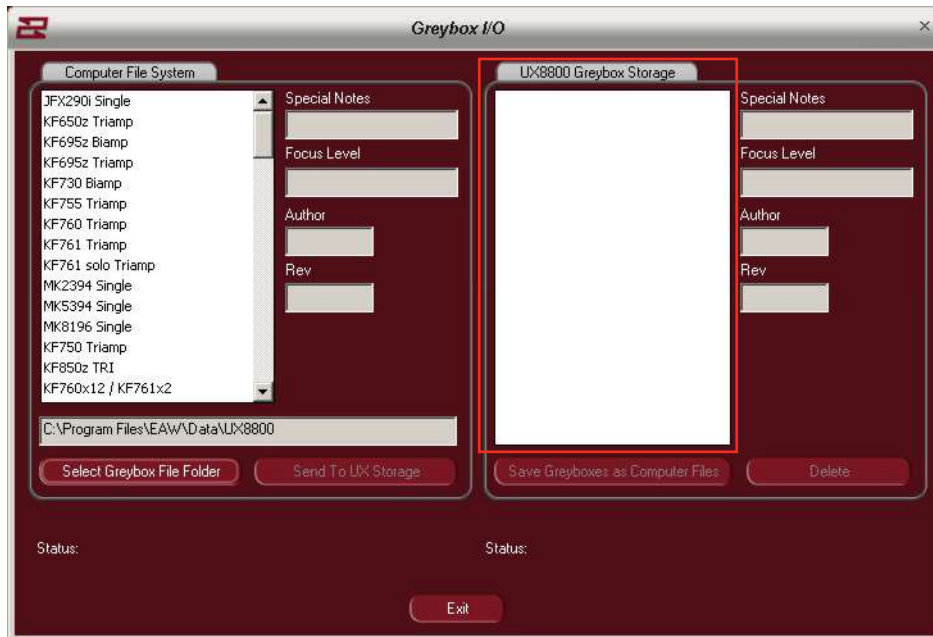
Browse your computers file system for other GreyBoxes to recall



Send a selected GreyBox to the UX8800 storage



Greyboxes currently stored on the UX8800 – if any.



GreyBox file attributes



Select a GreyBox for storage to Your PC.



Delete GreyBox from the UX8800



File transfer status



Exit "File Management" feature

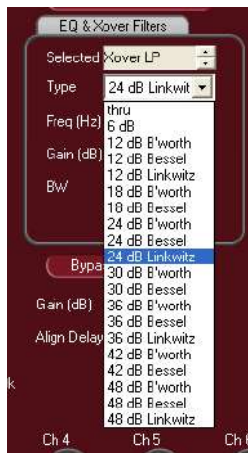


## Open System Processing

If processor outputs are not loaded for greybox usage, they can be used for generic processing.



High and low pass filters may be set to create crossover settings for any desired product.



Filters may also be set with click and drag.



Limiters may be custom set by entering absolute numeric values. Thresholds can be modified by left click and drag of the threshold bars.





