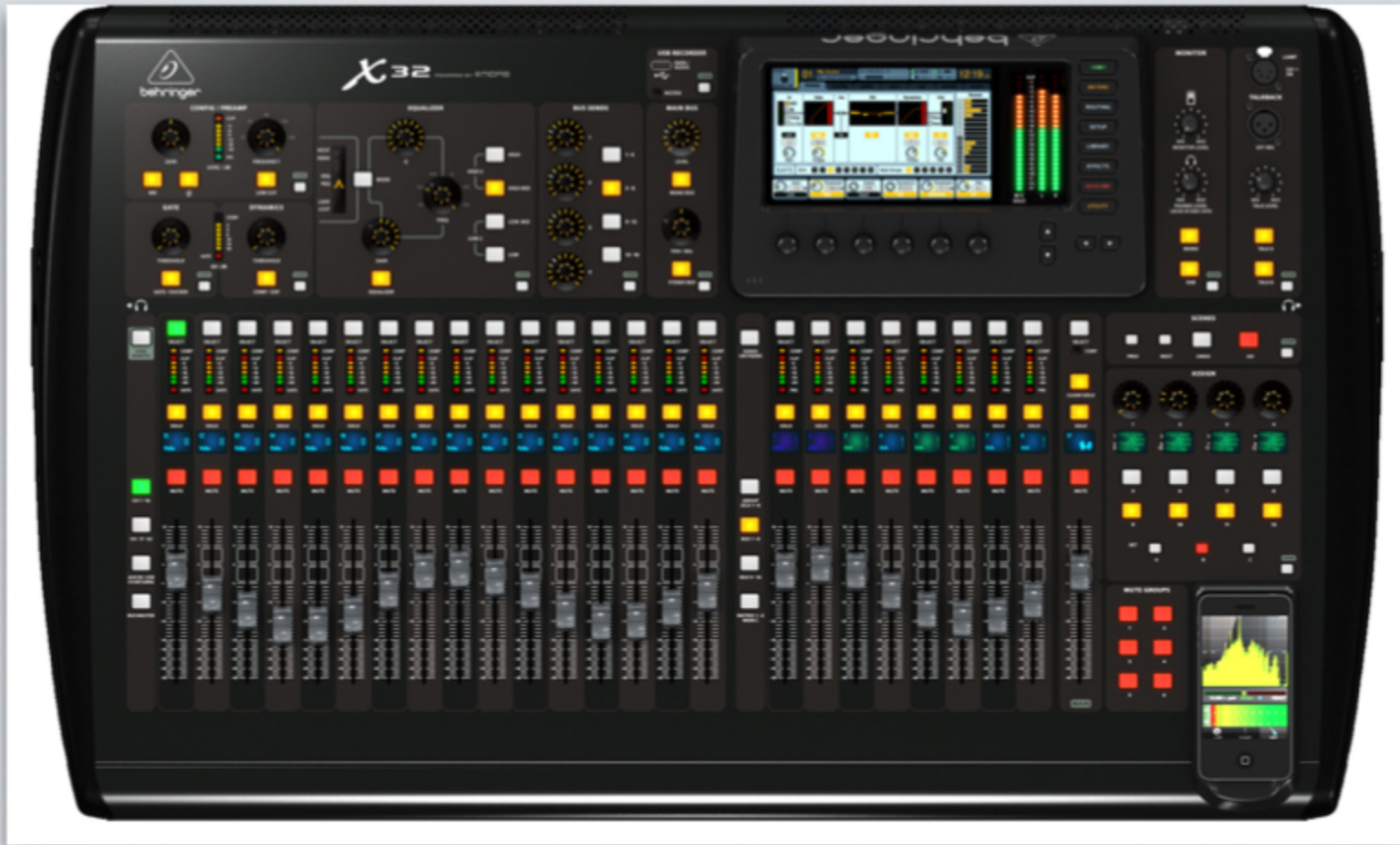




LIVE SOUND

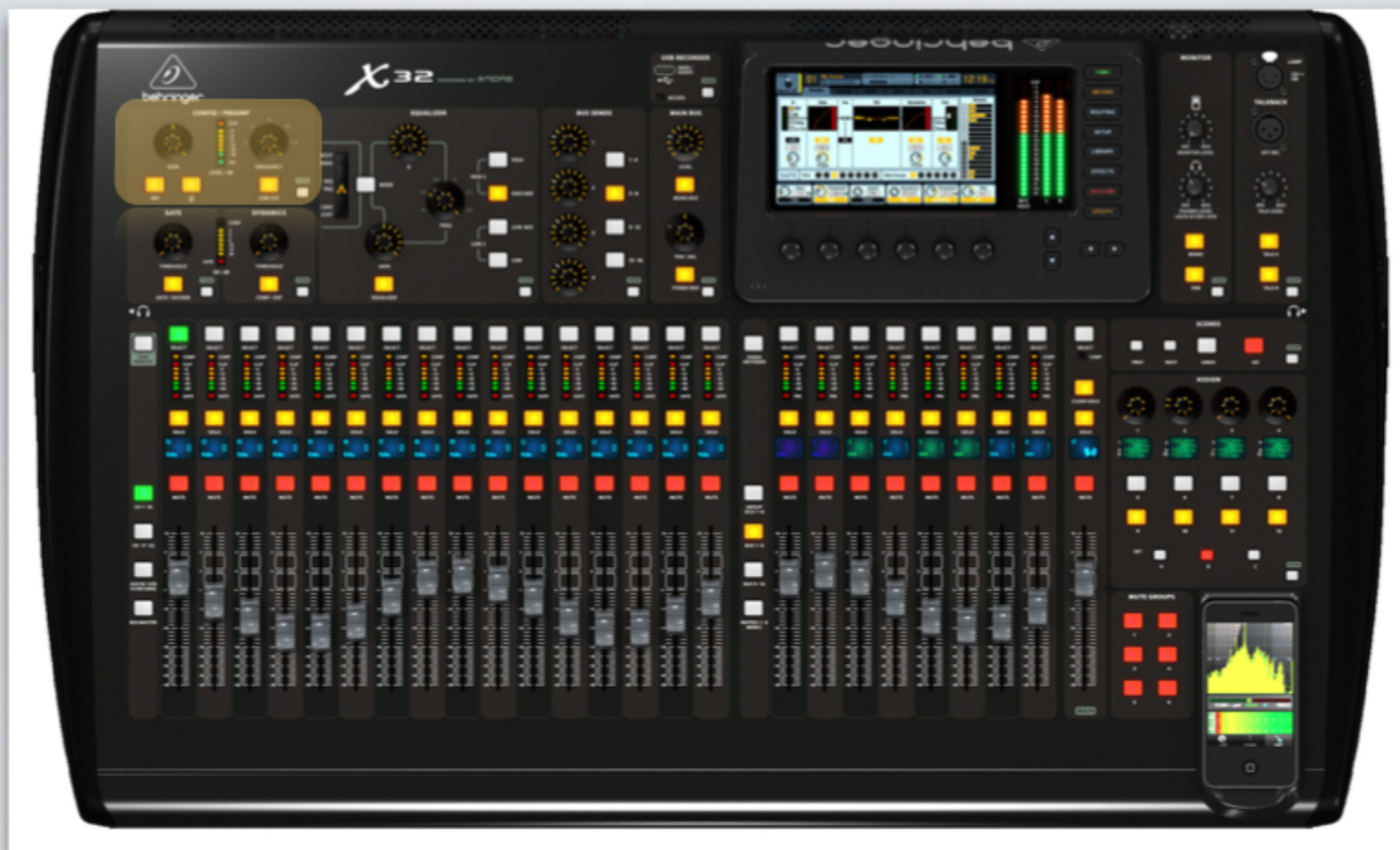
Momentum Christian Church



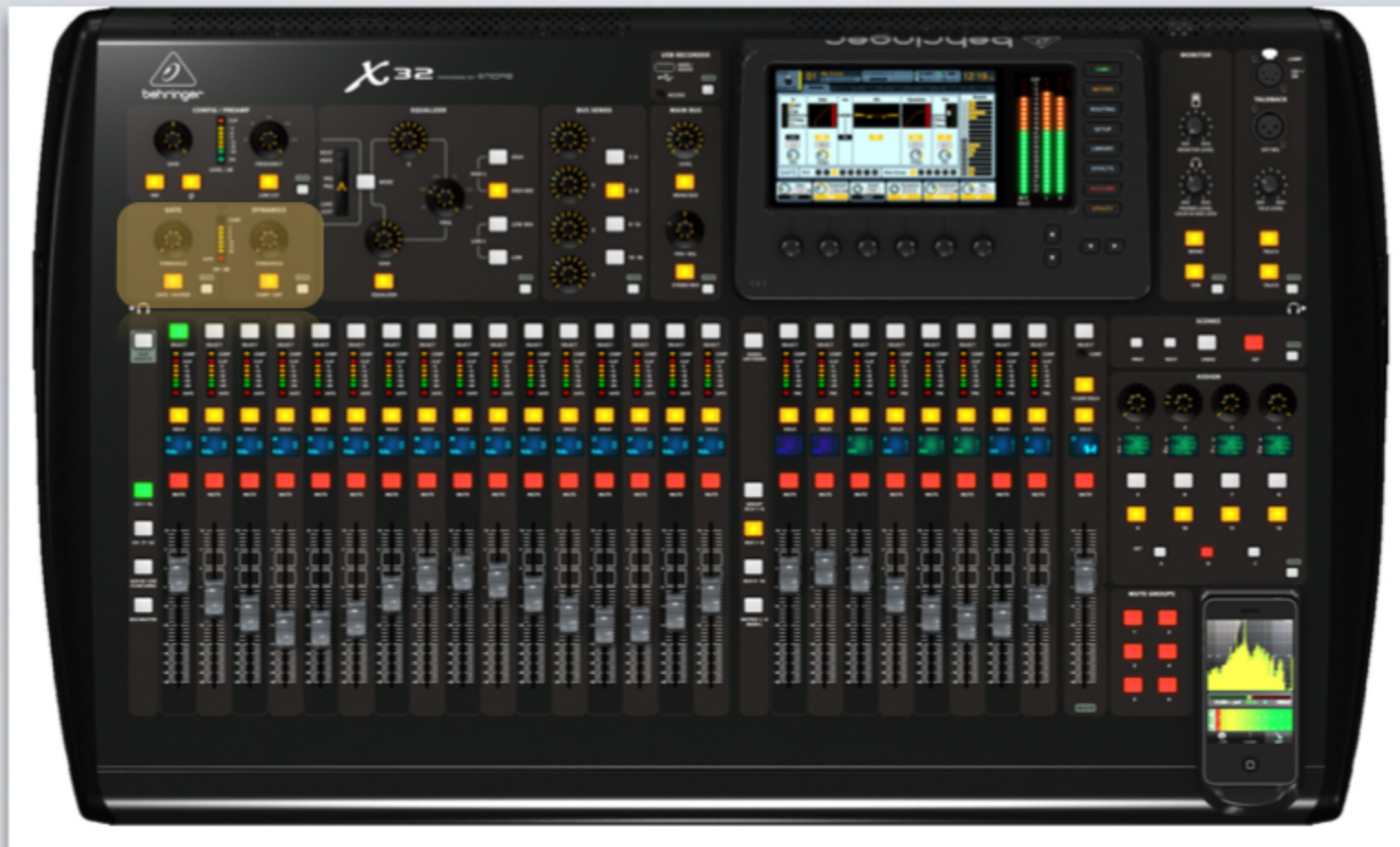
X-32

X-32

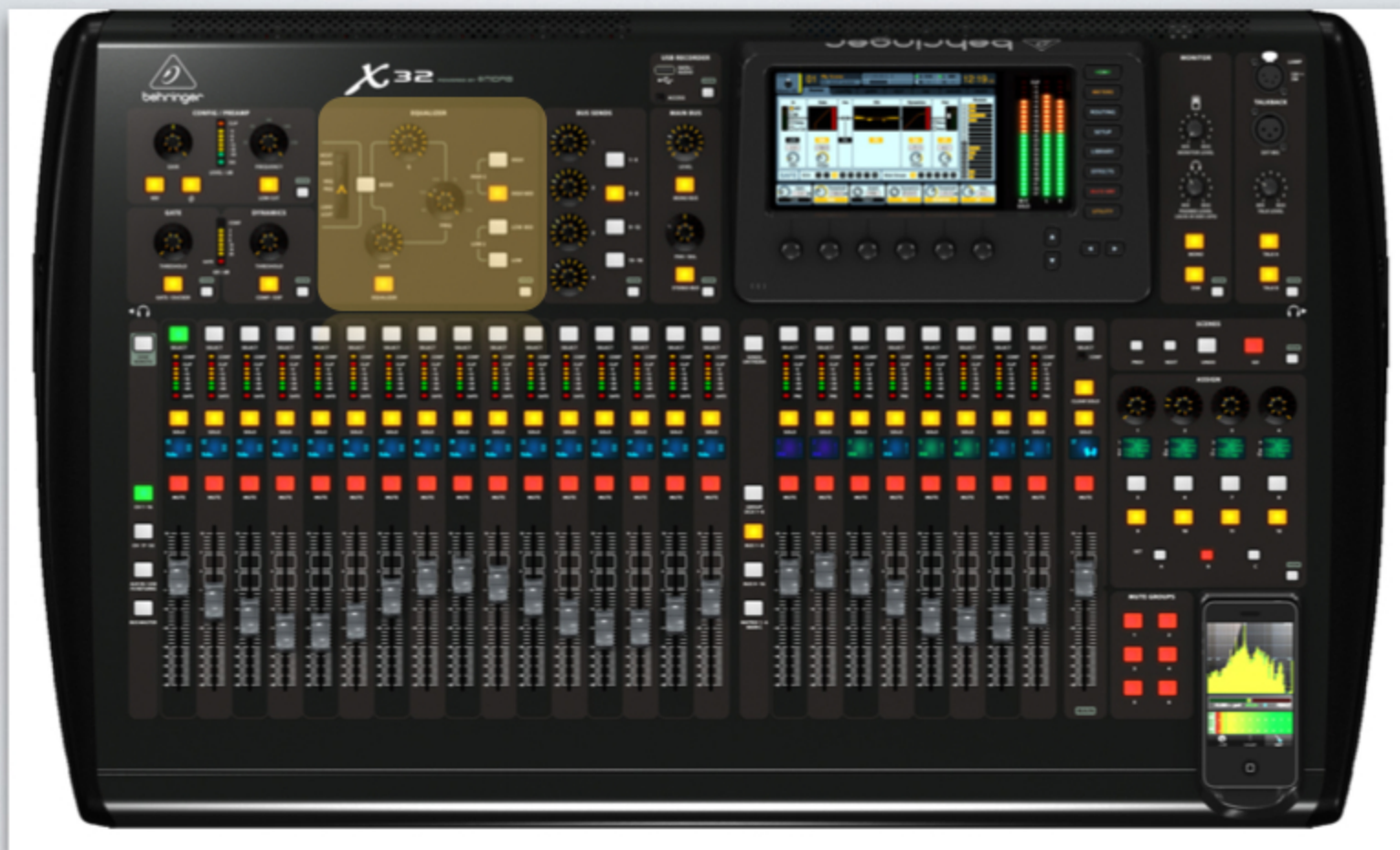
- 32 inputs
- 16 outputs
- Completely digital - Built using Midas pre-amps
- Built in 8 bay effects processor
- Built in 4 channel EQ per channel



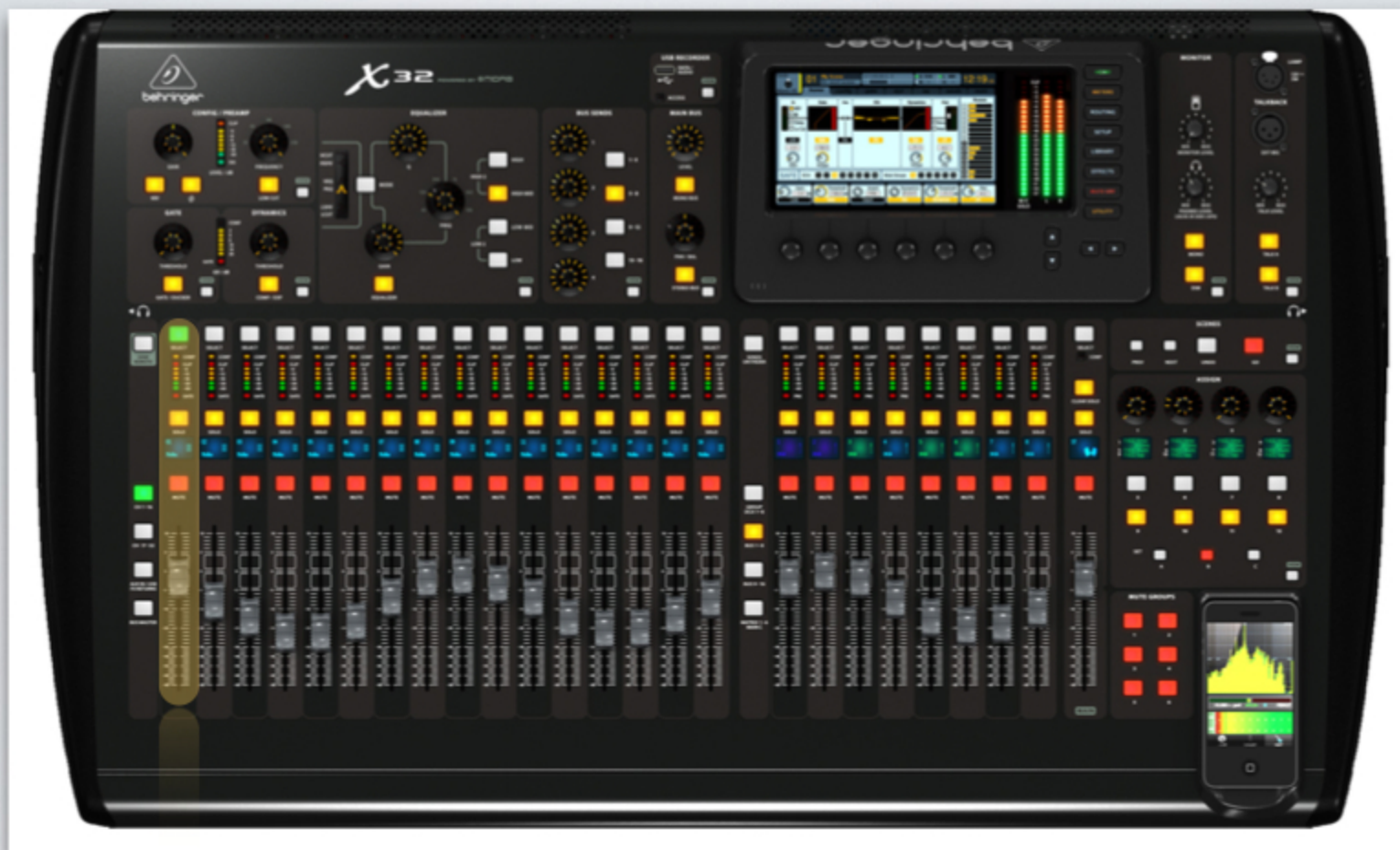
The highlighted area is the gain and low cut filter option.
This is where the signal enters the board.
Phantom power is here as well



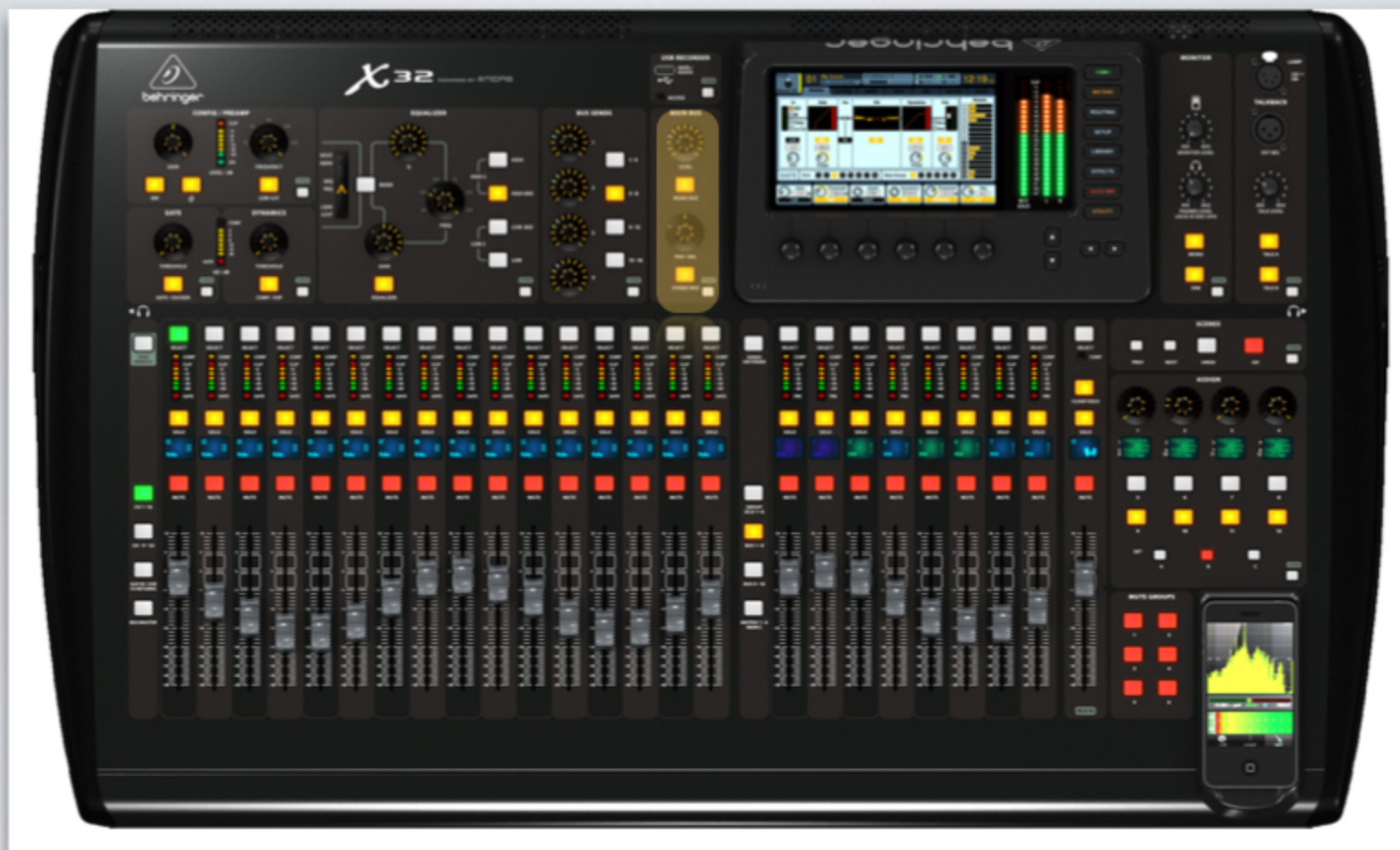
The signal now travels through the gate and dynamics highlighted above.



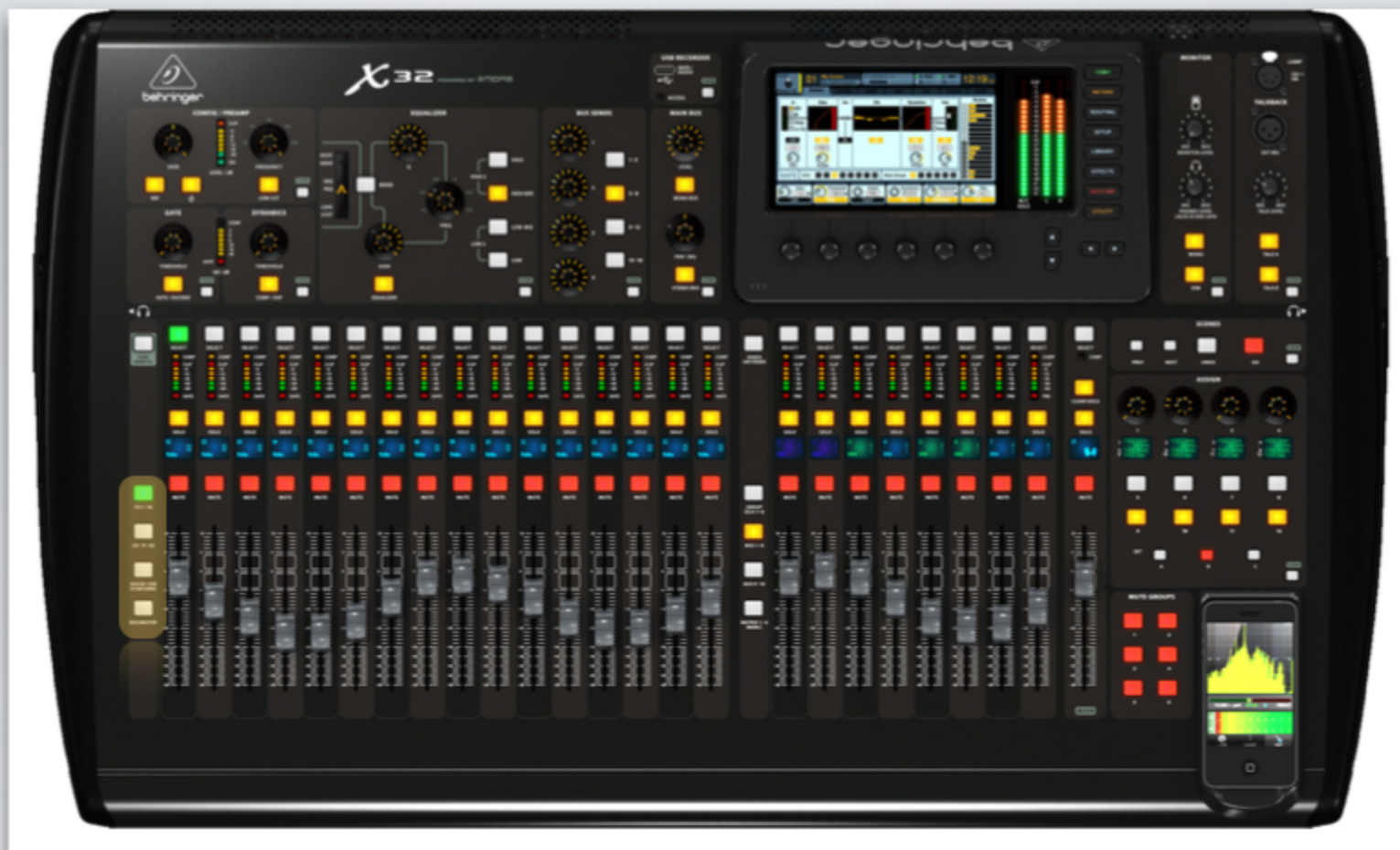
Once we pass through the dynamics the signal is passed into the 4 channel EQ if it is turned on.
Low /Low-Mid /high mid/High are the 4 channels
You can set the gain, frequency, and Q in any configuration
The Low and High channels also have the option to be shelf and cut filters



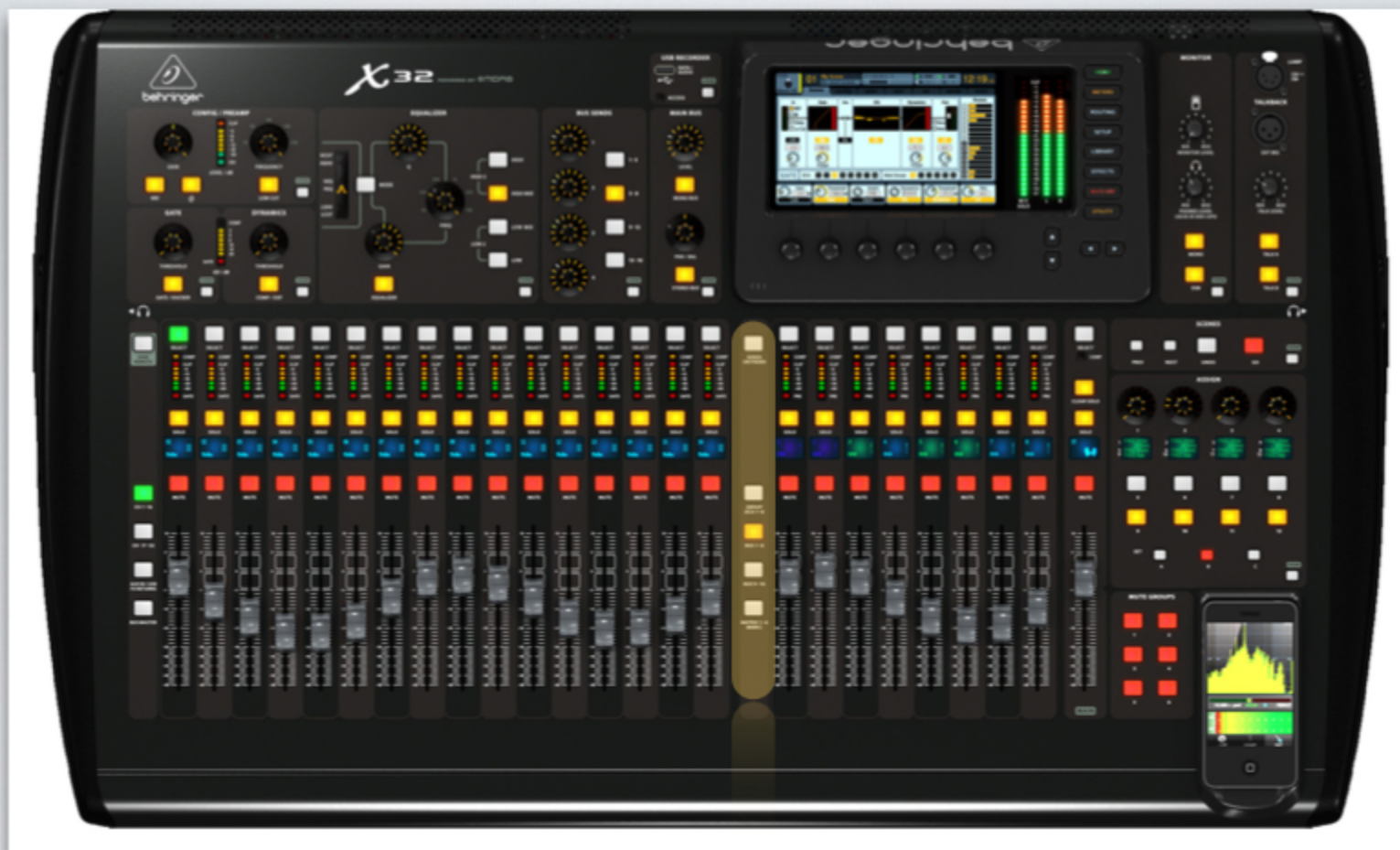
After the output sends we come to the Fader strip. The first button is the select button which associates the top left portion of the board to that channel. Next is a level meter; below that is the solo button for isolating channels for monitoring with headphones. The Scribble strip is completely digital and easily labeled, Mute is directly above the channel fader.



This area is where you assign the channel signal to the mains or the mono bus. Note: Westridge uses the Mono Bus for the Sub Mix.

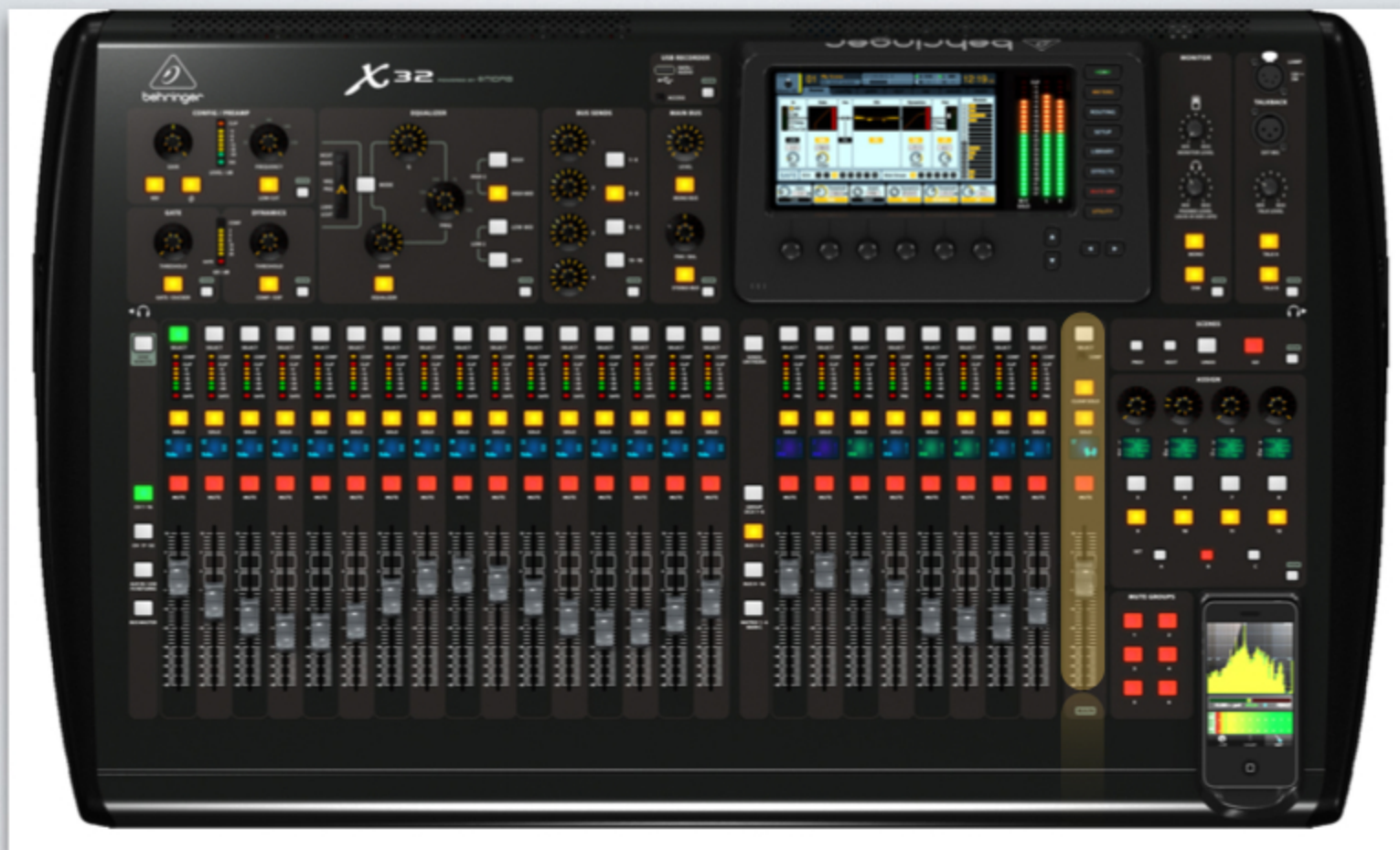


These four buttons change the associated channels to the right of them. Button 1 is Channels 1-16, Button 2 is Channels 17-32, Button 3 is Aux sends and Effects Returns, Button 4 is Output Buses

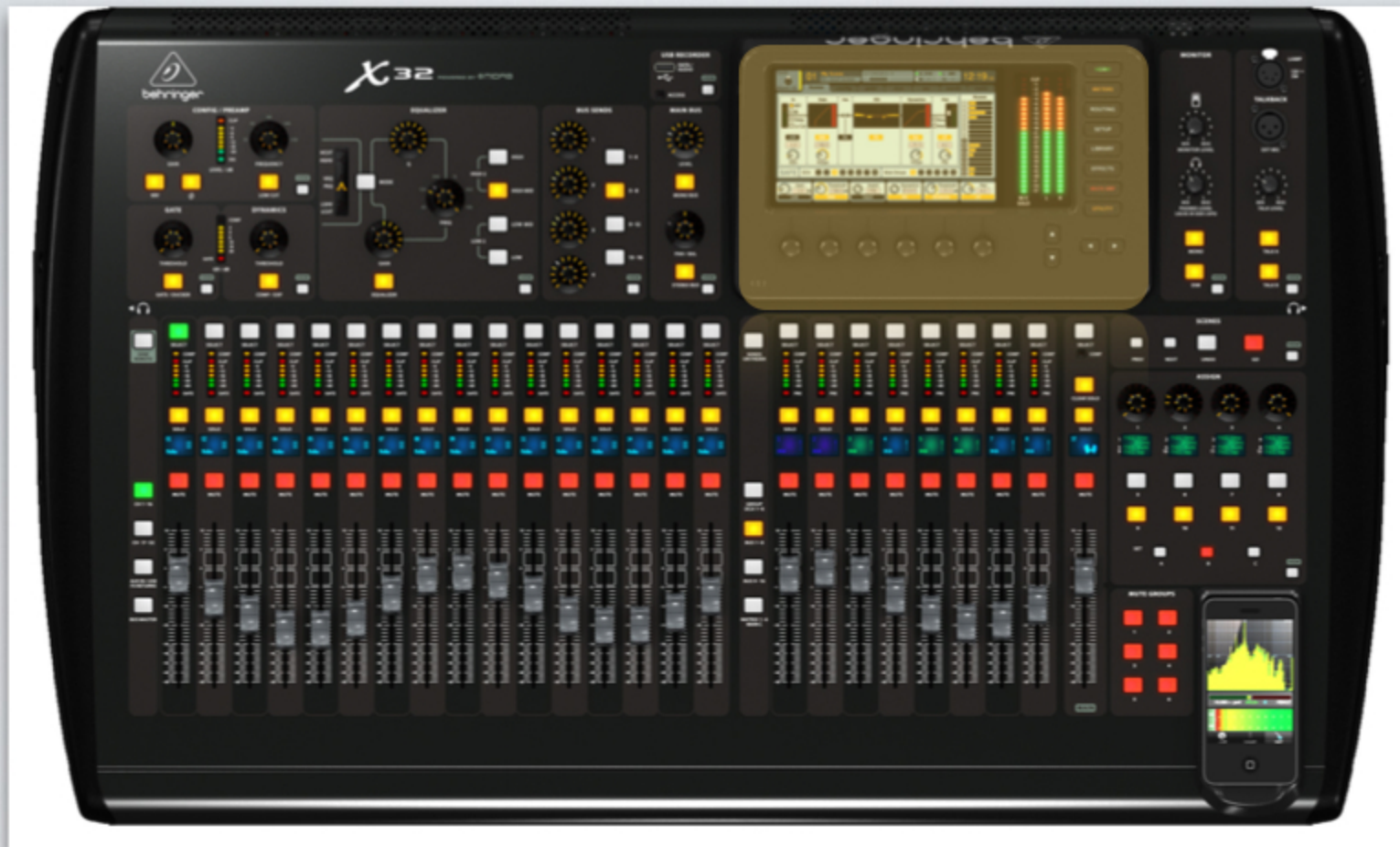


The top button is called the "Sends on Fader" button, it allows you to independently set the fade level for either an input channel into the outputs, or the output bus level of the input faders.

The next four buttons are again pages changing the associated faders to their right. Button 1 is DCA group 1-8, Button 2 is Bus 1-8, button 3 is bus 9-16, button 4 is matrix and the Mono signal



This is your mains fader



This area is the main display. This will show you tons of pertinent information as well as allow you to configure the board in numerous ways.

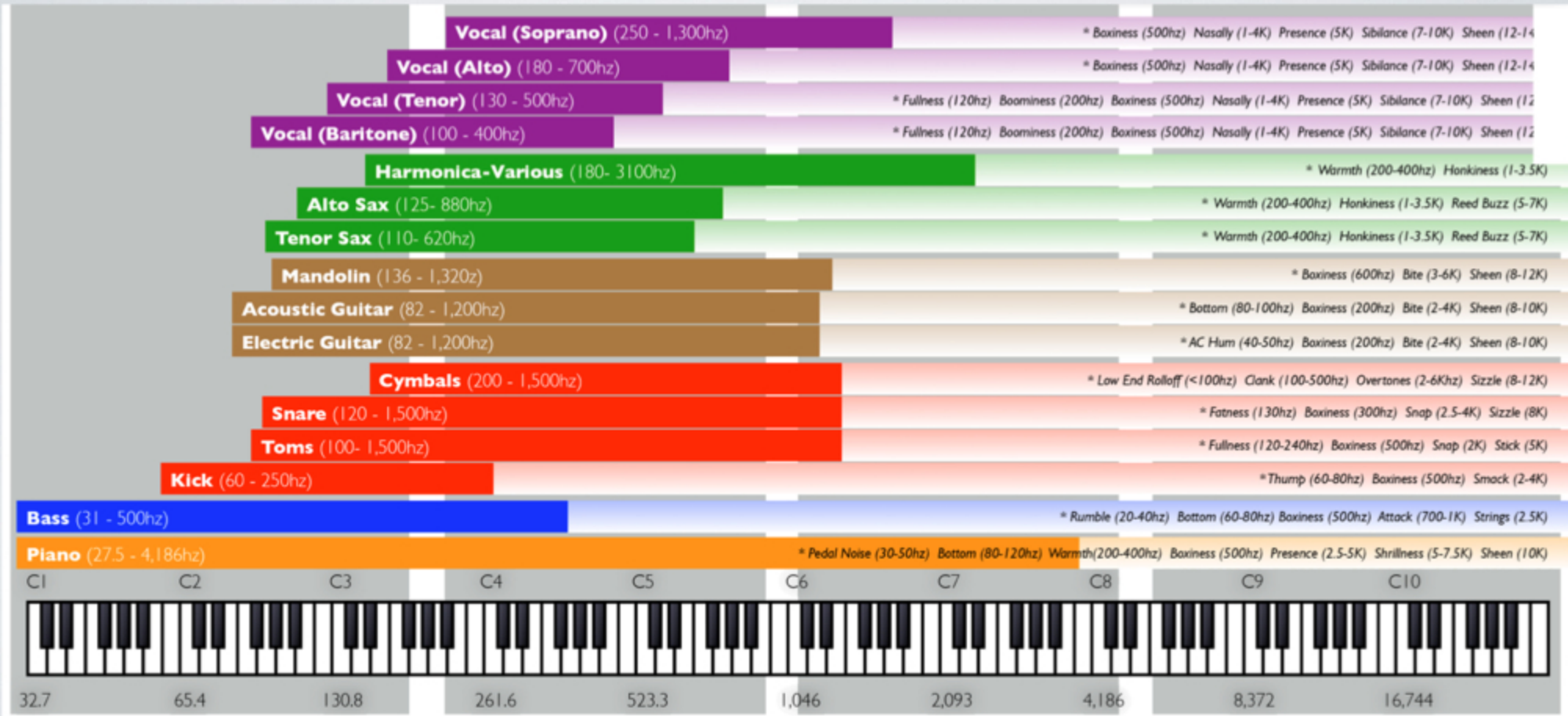
- The home brings up the current channels home screen
 - The Meters button will show you numerous meter readings coming through different sections of the board
 - The Routing Button allows you to change the routing of the inputs and outputs
 - Setup contains the init settings for the board, as well as the network information
 - **Library contains all of the save channels, as well as effects, and scene settings**
 - Effects gives you access to the 8 Bay digital effects processor
 - The mute group button is used to set up the mute groups discussed earlier
 - The utility button is used to load and save presets as well as modify the scribble strip of each channel
- * The two lighter options should never really be manipulated except under special circumstances



SOUND TECH

- You are in a position of knowledge
- Knowledge of the Music
- Be a critical thinker
- Ability to communicate well with musicians(the better their mix in ear the better they will play and sound)
 - Be extremely friendly, and lighthearted, but there is a time and a place to speak firmly
- basic sound theory
- serve the band then serve the house

TONAL SPECTRUM AND OVERLAP



- The solid colors are the base frequencies of these sources, and the lighter color are their harmonics
- As you can see they overlap and so this is where EQ'ing and fader position come into play the most

SOUND FLOW

- Like water
- Starts at the input
- to the mixer
 - Forks out to the monitors
- to additional processors (EQ, gate limiter, compressor, delay, reverb)
- to amplifiers
- to speakers



MIXER BASICS

- Input Walkthrough
 - Trim or Gain
 - Phantom Power
 - Low cut/High Pass
 - Dynamics
 - EQ
 - Aux Sends
 - Pan
 - Mute
 - Solo/PFL
 - Volume Faders

MIXER BASICS

- Sound Mixing in a live environment is a fluid and changing process.
 - You should be checking the room by walking the floor to see how sound is reflecting and to have a better understanding of the current mix.
 - Make sure you utilize the sound board to keep the sound dynamic by continually monitoring the mix and making adjustments.
 - All criticism from other people is beneficial, anyone telling you anything can help you improve your sound mix, but sometimes that doesn't mean you need to change anything it is just more information to help you with the mix.

FIXING ISSUES

- No Signal
 - Nothing Coming into the Mic
 - Damaged mic
 - No phantom power applied to a condenser mic

FIXING ISSUES

- No Signal
 - Nothing coming through the Cabling to the board
 - Bad cable to the port on stage
 - bad port on stage box
 - Bad snake line
 - Bad port on the board

FIXING ISSUES

- No Signal
 - Nothing coming through to the fader
 - Insert creating open loop
 - Broken channel gain
 - routing configuration issue

FIXING ISSUES

- No Signal
 - Fader not sending signal to the mains
 - Channel is muted
 - Channel is not assigned to the mains or the sub output

FIXING ISSUES

- No Signal
 - No signal to the monitor
 - Aux send signal turned down
 - channel is muted
 - routing configuration problem

FIXING ISSUES

- Feedback
 - Channel Signal Gain is loud enough to pick up signal from the mains or subs
 - Channel Signal Gain is loud enough to pick up signal from the monitor
 - Microphone pickup pattern is too wide
 - microphone is damaged

FIXING ISSUES

- Distortion

- Input gain signal is too high
 - Created by volume fluctuations in a vocalist voice
 - Musician has adjusted the instrument volume after the channel gain has been set on a lower level
 - An expander has been added to the signal
 - The EQ has been over boosted
 - Main signal is too high
 - Amplifiers are sending a higher volume level to the speakers than they are capable of producing
 - amplifiers are just turned up too loud

FIXING ISSUES

- Noise

- Channel Gain is set too low
- microphone pickup pattern is too wide
- vocalist is too far away from the mic
- cabling is unbalanced
- cabling has a break in the shielding
- All cabling issues can exist from the source to the out up so they would need to be tracked down

FIXING ISSUES

- Hum

- unbalanced signal
 - a balanced line send the source signal down two separate paths 180 degrees out of phase from one another, audio equipment detects differences in voltage so any interference become undetectable because both phased lines receive the same interference
- ground loop
 - Caused by using power outlets that are connected through a breaker.
- Power interference