



RX1200 in Road Warrior Case

CONGRATULATIONS on your purchase of Carvin's **RX800, RX1200** or **RX1200R** mixer! The "R" version is a non-powered rack model designed for use with your own power amps while the **RX800** and **RX1200** models include built-in high power amplifiers for direct hook-up to your speakers. Please read this manual carefully to take advantage of the many features of your mixer.

SUPERB SOUND is derived from the extremely low distortion, high "Headroom" design. A state-of-the-art, low noise, high headroom, balanced XLR preamp for each channel features a common mode rejection of better than 78 dB, which means that any possible noise that may come over your cables is virtually eliminated. Even the balanced XLR output connectors guard your system from cable noise for professional recordings or external power amp connections. Distortion is nearly non-existent with THD below .1%, which guarantees the purity of your sound. Hear the difference - your sound will not seem "sterile" or "processed". It will be dynamically open and transparent just like it was meant to be!

LIGHT WEIGHT and EASY TO USE controls are logically laid out, making the RX Series simple to use - quick adjustments can be made easily. Its compact size and weight of 30 lbs. makes it the lightest, most powerful mixer of its kind. No other competitor in the industry offers a higher performance to weight ratio!

4 HIGH CURRENT AMPLIFIERS deliver 300 watts RMS each. A total of 600 watts is delivered to your main speakers, plus two 300 watt amps to drive your stage monitors for a total of 1200 watts. Speaker outputs feature both Twist-Lok and 1/4" jacks, delivering full power into 4 ohms, making these mixers more powerful than most amplifiers rated at 2 ohms. A peak indicator for every amp and a protect LED gives you a visual monitor.

A HIGH CURRENT POWER SUPPLY is provided by a beefy toroid transformer to assure continuous high amperage DC voltage to all three power amplifiers, eliminating "overload" or shut-down. 20,000 mfd capacitors offer a large power reservoir for bass thumping output.

The **RX1200R** features a 125k Hz switching power supply for operating your mixer at any voltage from 90 VAC to 240VAC. Like a laptop computer, you can go anywhere in the world and not worry about power adapters.

2 INDEPENDENT 24-Bit STEREO DSP EFFECTS allow you to independently assign each channel to your choice of simultaneous effects. You can dedicate chorus/rev to the acoustic guitar channel and reverb to the vocals, etc. Both effects are assignable to your stage monitors so you can hear yourself with full effects. The effects processors feature 256 effects each, including reverbs, choruses, flanging and echoes, with parameters fully adjustable for; damping, decay, depth, speed, regeneration and time.

ACTIVE 3 BAND CHANNEL EQ provides easy adjustment for the tone you want. The LO frequency controls start at 20 Hz and continue through 80 Hz for a solid non-flabby bass. A simple adjustment with the MID control gives you the best sound for vocals or guitar in the very important 750Hz frequency range. The 11.5k Hz HI treble control adds sparkle to your top-end without adding harshness. Both the LO and HI are "shelving", which means they are effective from 20Hz up to 20k Hz.

FOUR 7 BAND EQUALIZERS provide precise adjustments to fine tune your overall sound and to help control feedback. Unlike one stereo graphic equalizer, four independent 7 bands give you total control over each power amp output.

DISTORTION-FREE LIMITERS

The purpose of a limiter is to hold down peaks so the amp won't distort even with extra hot input signals (this protects your expensive speakers). In addition, limiters can increase your amp's average output by 3 db or more. Part of Carvin's design uses the more expensive, distortion-free linear "opto isolators". Unlike amps that use FET controlled limiters which can inject small amounts of distortion, our limiters keep your sound pure and uncolored!

ENGINEERED TO LAST Every RX Series mixer is housed in a rugged reinforced steel rackmountable chassis. Continuous full power is assured from a 370 sq inch, high-grade 6063-T5-aluminum heat sink cooled by a quiet variable speed fan. You'll never have to worry about protect or power reduction modes. Hidden deep in the heart of these mixers is the "SMT" Surface Mount Technology construction that utilizes surface mounted components to prevent parts from shaking or vibrating loose. Sealed controls and switches guard against the outside elements while heavy-duty connectors provide a positive connection to your cables. Fire retardant FR-4 military spec circuit boards feature double-sided copper construction to guard against noise and radio frequencies (RF). Precision 1% tolerances guarantee that your settings will be accurate every time. The RX Series is professionally made in the USA for years of service!

RECEIVING INSPECTION—read before getting started

INSPECT YOUR AMP FOR ANY DAMAGE which may have occurred during shipping. If any damage is found, please notify the shipping company and CARVIN immediately.

SAVE THE CARTON & ALL PACKING MATERIALS. In the event you have to re-ship your unit, always use the original carton and packing material. This will provide the best possible protection during shipment. CARVIN and the shipping company are not liable for any damage caused by improper packing.

SAVE YOUR INVOICE. It will be required for warranty service if needed in the future.

SHIPMENT SHORTAGE. If you find items missing, they may have been shipped separately. Please allow several days for the rest of your order to arrive before inquiring.

RECORD THE SERIAL NUMBER on the enclosed warranty card or below on this manual for your records. Keep your portion of the card and return the portion with your name and comments to us.

USA customers register online at: www.carvin.com/registration

All other countries register online at: www.carvinworld.com/registration

For your records, you may wish to record the following information.

Serial No. _____ Invoice Date _____

MODEL RX800, RX1200, RX1200R SPECIFICATIONS:

Frequency Response:	Mic or Line Inputs: 20Hz-20kHz ±1dB
Total Harmonic Distortion:	Less than .1% at nominal levels
Equivalent Input Noise:	150 ohm source: -117dBu
Output Noise:	-100dBu Master Line Out (All Levels Minimum)
Output Headroom:	+10dB
Maximum Gain:	Mic in to Master Line Out: 50dB
Crosstalk:	Adjacent ch's: -60db at 1KHz
Common Mode Rejection:	-78db at 1KHz
Phantom Power:	50 volts, XLR Mic channels
Channel EQ 3-band active:	LOW: 80Hz ±12dB MID: 750Hz ±12dB HI: 11.5KHz ±12dB
Power Output:	1200w @ 4Ω (8Ω: 200w x4, 4Ω: 300w x4)
Size and Weight:	RX800/RX1200: 8.75"H x 19"W x 8"D, 30 lbs. with RoadWarrior case: 11"H x 21.5"W x 15.5"D, 50.5 lbs. RX1200R: 8.75"H x 19"W x 8"D, 15 lbs.
Power Req.:	120VAC / 60 Hz or optional 240VAC / 50 Hz model
RX1200R Power Req.:	90-240 VAC / 50-60 Hz
Remote Effects Controller:	Optional FS22 footswitch



12340 World Trade Drive, San Diego, CA 92128
800.854.2235 www.carvin.com



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



IMPORTANT! FOR YOUR PROTECTION, PLEASE READ THE FOLLOWING:

WATER AND MOISTURE: Appliance should not be used near water (near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

POWER SOURCES: The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

GROUNDING OR POLARIZATION: Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

POWER CORD PROTECTION: Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

SERVICING: The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

FUSING: If your unit is equipped with a fuse receptacle, replace only with the same type fuse. Refer to replacement text on the unit for correct fuse type.

SAFETY INSTRUCTIONS (EUROPEAN)

The conductors in the AC power cord are colored in accordance with the following code.
GREEN & YELLOW—Earth BLUE—Neutral BROWN—Live

U.K. MAIN PLUG WARNING: A molded main plug that has been cut off from the cord is unsafe. NEVER UNDER ANY CIRCUMSTANCES SHOULD YOU INSERT A DAMAGED OR CUT MAIN PLUG INTO A POWER SOCKET.

LIMITED WARRANTY

Your Carvin product is guaranteed against failure for 1 YEAR unless otherwise stated. Carvin will service and supply all parts at no charge to the customer providing the unit is under warranty. Shipping costs are the responsibility of the customer. CARVIN DOES NOT PAY FOR PARTS OR SERVICING OTHER THAN OUR OWN. A COPY OF THE ORIGINAL INVOICE IS REQUIRED TO VERIFY YOUR WARRANTY. Carvin assumes no responsibility for horn drivers or speakers damaged by this unit. This warranty does not cover, and no liability is assumed, for damage due to: natural disasters, accidents, abuse, loss of parts, lack of reasonable care, incorrect use, or failure to follow instructions. This warranty is in lieu of all other warranties, expressed or implied. No representative or person is authorized to represent or assume for Carvin any liability in connection with the sale or servicing of Carvin products. CARVIN SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

When RETURNING merchandise to the factory, you may call for a return authorization number. Describe in writing each problem. If your unit is out of warranty, you will be charged the current FLAT RATE for parts and labor to bring your unit up to factory specifications.

MAINTAINING YOUR EQUIPMENT

Avoid spilling liquids or allowing any other foreign matter inside the unit. The panel of your unit can be wiped from time to time with a dry or slightly damp cloth in order to remove dust and bring back the new look. As with all pro gear, avoid prolonged use in caustic environments (salt air). When used in such an environment, be sure the mixer is adequately protected by a cover.

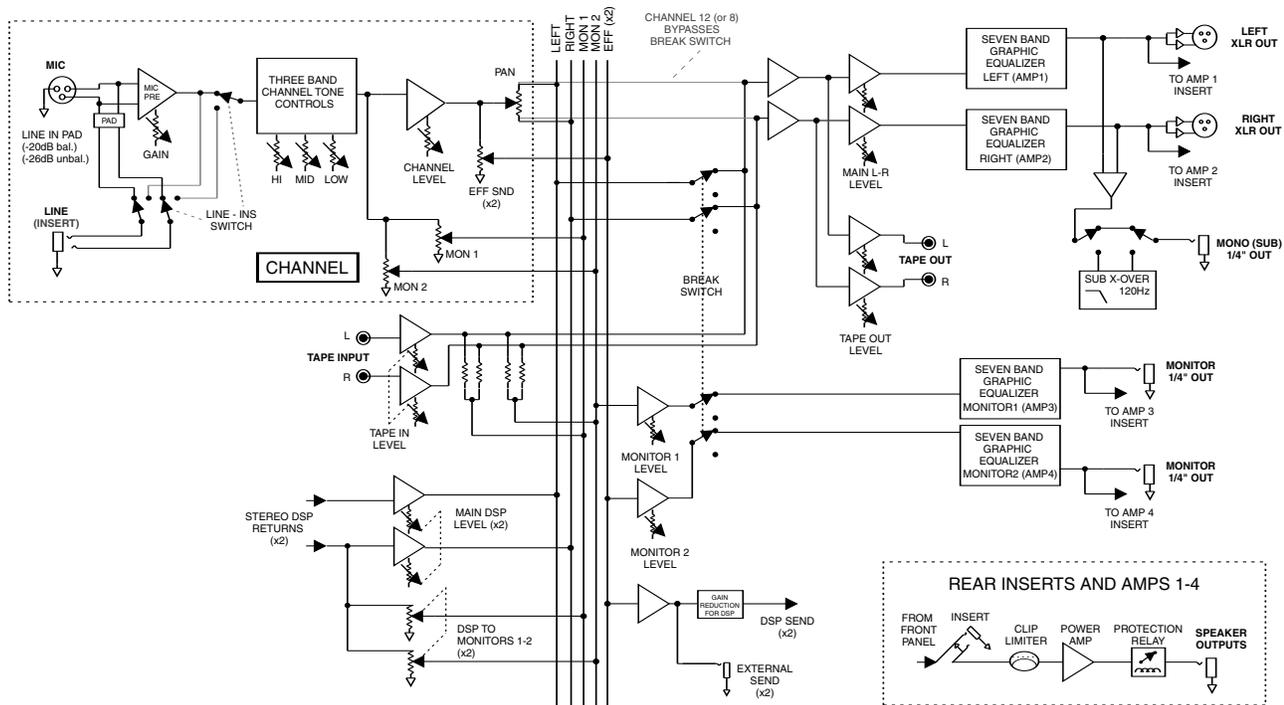


CAUTION

RISK OF ELECTRIC SHOCK

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL! THIS UNIT CONTAINS HIGH VOLTAGE INSIDE!

RX1200 BLOCK DIAGRAM



RX800, RX1200, RX1200R CONTROLS

QUICK START UP

If you're like most new owners, you're probably in a hurry to plug your mixer in and use it. Here are some brief instructions to get you going quickly. With the mixer unplugged and the unit turned off, complete the following procedures:

A. CONNECTING AC POWER TO YOUR MIXER

- Be sure to plug your mixer into the proper voltage for your country, either **120V-60Hz** or **240V-50Hz**. The **RX1200R** accepts both voltages listed.
- Use only a grounded (3 prong) power outlet to prevent a shock hazard. This gives the quietest grounding for your mixer.

B. CONNECTING INPUTS TO YOUR MIXER

- For balanced microphones, use a shielded cable and plug into the **XLR MIC** inputs.
- For high output devices like instruments & keyboards, plug into the **LINE** input jacks using a shielded cable. Be sure the **LINE/INS** switch is in the **"OUT"** position.

C. TURNING YOUR MIXER ON

- Set all channel and master **LEVEL** controls to their **OFF** positions
- Set all **HI**, **MID**, and **BASS** controls and the graphic equalizers to their **center** "flat - no boost or cut" position.
- Adjust all channel **"PAN"** controls to their **center** position.
- Connect your speakers and monitors at the rear panel.
- Turn the mixer on by the rear **POWER SWITCH** and watch for the front **POWER LED** to come on. Your mixer is now ready to operate by turning the levels up.

MIC CHANNEL FEATURES

1. LINE INPUT/INSERT JACK

The **LINE** input is a 1/4" phone jack designed for balanced or unbalanced line or instruments. Examples of these inputs would be guitar, keyboard or CD player. The line input can be used at the same time the mic input is being used. This jack becomes an insert when the **INSERT** switch is pushed **"IN"**.

2. INSERT SWITCH

This switch changes the function of the channel's 1/4" jack. The **"OUT"** position is for normal **LINE** level inputs. Pressing the **INSERT** switch **"IN"** changes the jack into an **INSERT** with **SEND** and **RETURN**. This allows you to place effects on the channel after the **GAIN** control for lowest noise. To insert effects (such as a compressor, etc.) use a 1/4" stereo splitter adapter (like Carvin **AP1**). Connections are **TIP-SEND** and **RING-RETURN**.

3. XLR MICROPHONE INPUT

The **XLR MIC** input is designed for balanced low impedance microphone and **DIRECT OUT** signals. The high performance mic preamps do a superb job of noise reduction, but to get the lowest noise adjust the **GAIN** control properly (see #5). Note: Make sure the phantom power is switched off (discharged) for at least 5 seconds before connecting or disconnecting microphones to the mixer.

4. CHANNEL LEVEL CONTROL

The **LEVEL** control adjusts the volume of the channel before going to the **PAN** control. Here is where the individual channel volumes are adjusted to make up the overall mix at the **MAIN L/R** outputs. Start with the **LEVEL** set between 3-5.

5. GAIN CONTROL / PK LED

The **GAIN** control varies the input level on both the **LINE** and **MIC** input jacks by 40dB. With a **LOUD** input signal, (loud vocal, hard hits on drums, etc...) turn up the **GAIN** control until a strong signal is present. If the **"PK"** LED shows or distortion is heard, the input stage is being overdriven. Lower the **GAIN** control until the LED does not light.

6. CHANNEL PAN CONTROL

The **PAN** control sends the channel signal to the **MAIN L/R** outputs. If stereo placement is needed, turn the **PAN** control toward the **LEFT** or **RIGHT** position.

7. EFF 1 & EFF 2 CONTROLS

The **EFF 1** and **EFF 2** controls adjust the levels sent to the

dual effects processors and to the **EFF 1** and **EFF 2 SND** jacks. The effects controls are post-channel level and automatically track the channel's **LEVEL** & tone controls. Reduce these levels if **PEAK** LEDs are flashing on the effects processors.

8. MON 1 & MON 2 CONTROLS

The **MON 1** and **MON 2** level controls adjust the volume of the channel going to the monitor amps. The monitor level control is a pre-channel level control. This means it is unaffected by adjustments from the channel level. The purpose for this is the monitor mix adjustments can be made without disturbing the main mix.

9. CHANNEL TONE CONTROLS

Each channel features active 3-band tone controls **LO**, **MID**, and **HI**. These function as boost (clockwise) or cut (counter-clockwise) controls. The center **0** is the "flat" or no effect position. The **LO** and **HI** controls are shelving type with corner frequencies at 80Hz and 11.5k Hz respectively. The **MID** control is a band pass type centered at 750Hz.

The remaining input channels (1-7, or 1-11) are turned **OFF** eliminating feedback or other unwanted sounds from open mics during breaks or changes. The **LED** indicates the **MUSIC BREAK** is **ON**. The internal effects are also muted.

13. TAPE IN AND TAPE OUT LEVELS

The **TAPE IN** level adjusts the input to your mixer from the **RCA TAPE IN** jacks to the **MAIN L/R** and **MONITOR** outputs. The **TAPE OUT** level sends the **MAIN L/R** signal (pre graphic EQ) to the **TAPE OUT** RCA jacks for recording. If the **TAPE OUT** is being used to record, make sure the **TAPE IN** control is turned **OFF** to avoid feedback from the recorder.

14. LEFT & RIGHT XLR OUTPUTS

The **LEFT** and **RIGHT** balanced XLR line outputs are the same signals that feed the internal **AMPS 1&2**. Use these outputs for additional power amps or recording gear.

15. MONITOR 1 & 2 OUTPUTS

The **MONITOR 1 - 2** line outputs are the same signals that feed the internal **MONITOR AMPS 3 & 4**. Use these outputs for additional power amps or recording gear.



MASTER SECTION FEATURES

10. MAIN L/R LEVEL (AMPS 1&2)

The **MAIN L/R** control is the master volume control for all channels. The **MAIN L/R** signals are sent to **GRAPHIC EQS 1&2** that feed the **AMPS 1&2**, the **LEFT** and **RIGHT XLR** output jacks, and the **MONO (SUB)** output jack.

11. MONITOR 1 & MONITOR 2 LEVELS (AMPS 3&4)

The **MONITOR 1** and **MONITOR 2** levels are sent to the **GRAPHIC EQS** which feed the **MONITOR** amps 3 & 4, and the **MONITOR 1&2** output jacks.

12. MUSIC BREAK SWITCH/LED

The **MUSIC BREAK** feature turns off all inputs except for the last channel (8 or 12) and the **TAPE IN** jacks. This is useful during breaks. This allows pre-recorded music to be played through the **TAPE IN** jacks. The channel 8 or 12 **MIC** and **LINE** inputs are left active for announcements or solo performers.

16. MONO (SUB) OUTPUT

The **MONO (SUB)** output combines the **MAIN L/R** output signals that feed the internal **AMPS 1&2**. Use this output for additional power amps or amplified subwoofer.

17. SUB X-OVER SWITCH

The **SUB XOVER** (crossover) switch removes all frequencies above 120Hz for connecting the **MONO(SUB)** output to an amplified subwoofer. This is a 3rd order (18db/oct.) filter.

18. TAPE IN / OUT JACKS

The **L-R TAPE IN** RCA inputs are ideal for connecting a CD or tape player. These **TAPE IN** jacks can also be used for returning another stereo effects processor or instrument (keyboard). The **L-R TAPE OUT** RCA jacks send the **MAIN L/R** signals (pre graphic EQ) for recording. If the **TAPE OUT** is being used to record, make sure the **TAPE IN** control is turned **OFF** to avoid feedback.



19. DSP PROCESSORS

Two 24-Bit processors provide a host of great sounding effects including Flange, Reverb, Echo, and Chorus.

The channel **EFF 1** & **EFF 2** send controls deliver the signals to the dual processors. Note: Reduce these levels if the red PEAK LEDs are flashing on the processors.

Turn up the **MAIN** controls to add effects to the MAIN L/R OUTPUTS.

The **MONITOR 1-2** levels control the amount of effects that go to the MONITOR outputs.

20. EFF 1&2 SND JACKS

The **EFF 1&2 SND** jacks can send signals to external processors. These are the same signals sent to the internal **EFFECT 1** and **EFFECT 2** processors.

21. AMP CLIP LED'S

The amp **CLIP** LEDs indicate when the internal power amps are starting to distort (clip). Reduce the MAIN L/R, MONITOR 1 or MONITOR 2 master volumes to prevent distortion.

22. PROTECT LED

The mixer will "protect", engaging relays to mute the speakers if: a) impedance is below 4Ω on any amplifier b) shorted speaker cables, or c) ventilation problems. If this LED comes on, shut the mixer **OFF** and check for cable problems, proper impedance and obstructed rear cooling vents. If you encounter an over-heat problem, leave the mixer **ON** allowing the fan to cool down the internal components. The mixer will auto-reset.

23. POWER LED

The Power LED indicates when the mixer is powered on.

25. EFFECTS FOOT SWITCH JACK



The optional **FS22** will remotely shut off EFFECTS 1 or 2.

26. PHANTOM POWER SWITCH AND LED

The **PHANTOM** power switch turns on the microphone phantom power in the channel XLR jacks. This power is used for supplying a voltage to condenser microphones. The LED indicates the phantom power is turned on. The phantom power will not damage conventional dynamic microphones. Note: Make sure the phantom power is switched off before connecting or disconnecting microphones to the mixer. It is recommended to allow 5 seconds for the phantom power to discharge before making any microphone connections.

REAR PANEL FEATURES

RX1200, RX800



27. POWER CONNECTIONS

The rear panel contains the **POWER SWITCH** and **AC** power cable connection.

28. AMP PATCH INSERTS

The **AMP PATCH INSERT** jacks offer full flexibility for mixer to amp signal routing.

These jacks are T-R-S (Tip-Ring-Sleeve). Tip is the power amp input. Ring is the signal sent from the mixer. The built-in power amp limiters are post insert.

Patching a compressor or equalizer between the mixer and the amp can be done by using a stereo insert cable (like Carvin's **AP1**). Connect the RING signal to the INPUT of the external device, and the TIP signal from the OUTPUT of the device.

Plugging in a standard 1/4" cable (mono) into the **AMP PATCH INSERT** jacks allows any external signal to be sent to the internal power amps.

DO NOT USE A BALANCED SIGNAL CABLE

29. SPEAKER CONNECTIONS

For the **RX800** and **RX1200**, there are 4 groups of speaker jacks. Each group has one Twist-Lok (Speakon™) and two 1/4" outputs (wired in parallel).

AMP 1 is for **LEFT** speakers.

AMP 2 is for **RIGHT** speakers.

AMP 3 is for **MONITOR 1** speakers.

AMP 4 is for **MONITOR 2** speakers.

NOTE: 4Ω MIN IMPEDANCE PER AMPLIFIER (Maximum one 4Ω or two 8Ω speakers per amp). **MAKE ALL SPEAKER CONNECTIONS BEFORE TURNING THE MIXER ON**.



EFFECT PARAMETERS

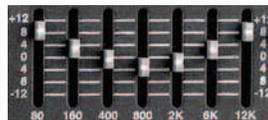
Each of the four effects have variable parameters that are easily adjusted by the **SELECT** and the **PARAMETER** controls to get the desired effect. Each "SELECT" & "PARAMETER" is described below. Note: An audible noise will be heard while adjusting the effects.

A) ECHO: Use **SELECT** to change the amount of regeneration (number of repeats). The **PARAMETER** control adjusts the delay time between the original signal and the echo.

B) REVERB: **SELECT** the amount of presence (high frequencies) in the reverb. The **PARAMETER** control adjusts decay.

C) CHORUS: **SELECT** the amount of reverb with your chorus. The **PARAMETER** control adjusts the depth.

D) FLANGE: **SELECT** the amount of speed with your flange (phasing effect). The **PARAMETER** control adjusts depth.



24. ADJUSTING THE GRAPHIC EQUALIZER

When the EQ sliders are in their center position, they do not affect the audio signal. When EQ sliders are raised or lowered from this position, they boost or cut respectively a narrow frequency band. To reduce feedback in the low frequency range, try lowering one of the 80 or 160 Hz sliders. High frequency feedback is usually reduced by lowering one of the 2k or 6k Hz sliders.

To help prevent feedback, the main speakers should be placed in front and away from the microphones.

For tone enhancement you may want to raise the 80, 160 (for deeper bass) and the 6k, 12k sliders (for crisper highs) forming a "smile" curve as shown.