



# Concert Series Mixers

C1240 • C2040 4-BUS MIXER BROCHURE/USER GUIDE

CARVIN



# OVERVIEW

CARVIN has been serving the music industry since 1946. Noted musicians such as Frank Zappa, Steve Vai and Craig Chaquico, have used Carvin consoles over the years. Carvin's commitment to USA manufacturing 65 years ago is upheld today in the face of most companies turning to off-shore manufacturing. The very best American workmanship and the highest standards in quality control are put into every Carvin product.

## Improving Your Live Sound

Carvin's C1240 and C2040 4-bus consoles were designed for high performance live mixing. Like all Carvin consoles, the heart of each board starts with high quality Mic Pre amps that provide smooth signals with plenty of headroom. Construction and circuit design is of the highest quality utilizing sealed potentiometers; poly film capacitors and 1% tolerance surface mount resistors. With THD less than .01%, every sound will remain pure to its source.

All primary outputs feature balanced XLR connections. Main L-R, Subwoofer and Monitor outputs are all balanced to accommodate long runs from the board. This is especially important when using powered monitors. Sending a balanced signal to the stage will ensure each monitor amplifies a high quality mix.

Two 24-Bit on-board stereo effect processors are available to every channel through EFF send 1 and 2. Should an outboard processor be needed, both EFF sends can be routed out of the board and returned in stereo using the last two stereo channels.

Another alternate use of the EFF sends is to use them as 2 additional monitor sends should they be required. This would be ideal for adding a personal ear monitor system such as Carvin's EM900. Should the musicians choose to have both stage monitors and ear monitors, the operator can mix these separately and adjust master levels separately as both the Monitor sends and EFF sends have master send controls.

## Simplicity In Operation

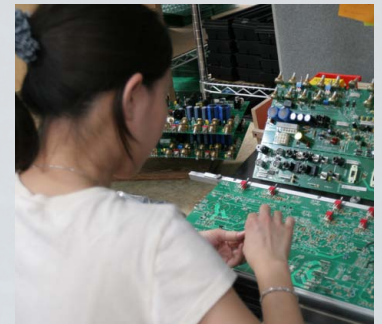
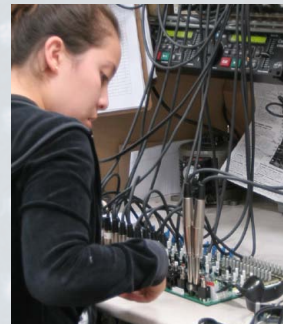
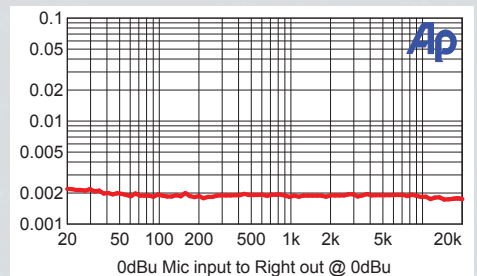
These mixers are designed on a small-scale platform which will make it easy to transport. No other console offers more channels per linear desk inch. The consoles are designed with the operator in mind. Ease of operation is incredibly important, because you may not have a technician available. Everything is logically arranged. Simply plug in the channels, adjust the monitor levels and bring up the main L/R faders and you're up and running.

## Stringent Testing

Our quality control department personally inspects every mixing console. After the physical inspection, the most critical and most important part of QC testing is running every channel, master section and connector through the Audio Precision™ computers to verify every function. This means everything meets 100% of its specifications. This is great assurance that every EQ section, every output delivers the highest voltages with the lowest possible THD. The chart below shows that the THD is actually .002% which is about 5 times lower than our stated THD of .01%.

## Construction

The engineering and design is what you'd expect from this high-end manufacturer. Ultra low-noise, high slew rate IC's for exceptional sound. Sealed controls and switches guard against the elements while the "SMT" Surface Mount Technology construction ensures the integrity of each component. The rugged chassis incorporates the integral SwitchMode™ 90V-260V 50-60 Hz power supply, which can be used worldwide.



Carvin's San Diego Factory





## CHANNEL FEATURES

- 12 and 20 ch models
- 8 XLR + 4 Stereo CH or 16 XLR + 4 Stereo CH
- 4 Buses + L/R + MONO
- Adjustable Gain attenuator
- 3 Band EQ w/ Mid sweep
- Low Cut Filter
- 4 Ch Monitor Sends
- 2 Ch Effects Sends
- Ch mute/Peak indicator
- PFL/solo

## 3 BAND CH EQ + LO CUT

The 3-band Ch equalizer offers both HF and LF EQ plus a mid sweep to dial in critical mid-frequencies. The LO CUT switch eliminates frequencies below 75Hz. This is ideal for reducing stage rumble and works well on channels such as guitar and snare drum where frequencies below 75Hz are not common.

## 4 CH MONITOR SENDS

4 monitor sends per channel is ideal for providing each band member their own custom monitor mix. Send each member's mix to a powered monitor or to an in-ear monitor transmitter.

## 2 CH EFFECT SENDS

2 effects sends permit two simulations effects for each channel utilizing the two on board effects processor or external processors.

## CH FADERS & ASSIGN SWITCHES

Each channel has assign switches that allow the operator to bus each channel to the desired output. A mute and PFL switch for solo monitoring is also available on every channel.



See Demo [CARVINCHANNEL.COM](http://CARVINCHANNEL.COM)

## MASTER FEATURES

- 4 Sub Groups + L/R
- Center/Sub output
- 2 effect processors – 256 effects each
- Effects to monitors
- 2 9-band L/R Graphic EQ's
- USB power port
- C2040: Rear slots for wireless options (up to 2 mics or beltpacks)
- Ultra low THD – less than .001%
- SwitchMode™ 90-260 VAC power supply

## HEADPHONE MONITORING

Assign any combination of the 4 ch monitors, 4 busses, L/R and MONO outputs and for headphone monitoring.

## USB POWER PORT

A convenient USB power port is available for powering your iPod™ while in use or to power an optional LED gooseneck light.

## WIRELESS OPTION FOR C2040

The exclusive True Diversity **USM16** built-in wireless system can be installed in the **C2040**. Two receivers can be installed which can be used with wireless microphones, lavalier mics or guitar transmitter. The signals are automatically routed to the first two channels on the console. Each system is connected with a simple plug-in connector. For more information, read about the **UX16** wireless products, which is the outboard version of the **USM16**. See [Carvin.com/USM](http://Carvin.com/USM).



## SPECIFICATIONS

|                 |  |
|-----------------|--|
| Freq. response: | 20-20k Hz ±1 dB  |
| THD distortion: | .01% 20-20k Hz   |
| E1N:            | -117 dBm   |
| S/N Ratio 90 dB |  |
| Dynamic Range:  | 104 dB   |
| Mic Gain:       | 52 dB  |
| Line Gain:      | 30 dB  |
| Total Gain:     | 72 dB (balanced)   |
| Max Output:     | +28 dBm  |
| Power Req.      | 90 to 250VAC 50-60Hz   |
| <b>C1240:</b>   | 14.5"W x 16.3D x 3.75"H, 14 lbs<br>36.8cmW x 41cmD x 9.5cmH, 6.4 kgs |
| <b>C2040:</b>   | 22.2"W x 16.3D x 3.75"H, 18 lbs<br>56cmW x 41.4cmD x 9.5cmH, 8.2 kgs |



## QUICK START UP

Here are some brief instructions to get you going quickly. With the mixer unplugged and the unit turned off, complete the following procedures:

### 1. CONNECTING AC POWER TO YOUR MIXER

- The mixer can be used with either 120 or 240VAC.
- Use only a grounded (3 prong) power outlet to prevent a shock hazard and for the quietest grounding for your mixer.

### 2. CONNECTING INPUTS TO YOUR MIXER

- For low level balanced devices such as microphones, plug into the balanced XLR MIC inputs.
- For high level balanced or unbalanced devices such as instruments & keyboards, plug into the LINE input jacks using a shielded 1/4" cable.

## CHANNEL FEATURES

### 1. 1/4" LINE INPUTS

The line connectors are for connecting balanced and unbalanced instruments and line level sources such as drum machines, keyboards, ETC.

### 2. XLR MIC INPUTS

The balanced Mic inputs are for connecting microphones with XLR connections. Both the LINE and XLR MIC inputs can be used simultaneously.

### 3. CHANNEL INSERT/DIRECT OUT

To insert channel effects, compressor, etc. use a 1/4" TRS (Tip/Ring/Sleeve) cable. For a direct out from the channel, insert a standard 1/4" cable to the first "click" (half insert).

### 4. GAIN

The **GAIN** controls the input level for the channel. The green **SIG** LED indicates the incoming signal. The **PEAK** LED will flash red if the **GAIN** is set too high. Turn down the **GAIN** until the **PEAK** LED does not flash to avoid distortion. You can use the channel **PFL** switch to monitor the channel input level and use the meters to adjust the **GAIN** control to **0dB** for optimal signal gain.

### 5. LOW CUT SWITCH

A 75 Hz **LOW CUT** filter helps eliminate unwanted low frequencies. Great for reducing "boom" noise from mic stands or from acoustic/electric guitars. Turning up the **LOW EQ** when using this filter can help create a punchier bass response.

### 6. 3 BAND ACTIVE EQ

The  $\pm 15$  dB boost or cut gives an overall 30 dB range for powerful EQ control. The active circuits deliver deep bass from the 20-80 Hz **LOW** control. The **MID** control works from 100 to 5kHz, depending on the **MID FREQ** setting. The stereo channels feature a  $\pm 15$  dB **MID** boost or cut. The **HI** control functions from 11-20k.

Start out with all tone controls at their center "zero" position. Determine which position your **MID FREQ** sounds best, then cut or boost your **HI** and **LOW** frequencies as needed. Try various mics and mic placement on instruments before adjusting the EQ. A typical setting may be: **HI -3**, **MID FREQ** set at **700Hz -3** and **LOW +3**.

### 7. MID SWEEP

These controls allow you to select which frequency that the **MID** control boost or cut. By adjusting the **MID FREQ**, you can select the exact frequency to boost or cut that will best complement various inputs. 700Hz is recommended for the **MID FREQ** control for guitar & vocals.

*Don't be afraid to adjust the HI, MID & LOW controls to get good presence and depth. This is one of the keys to great sound.*

### 8. MONITOR 1 THRU 4 SEND CONTROLS

The channel **MONITORS** allow you to create four independent monitor mixes. The **MONITOR** signals (pre-EQ, pre fader) are routed to the master **MON 1, 2, 3, & 4** controls (#20) respectively before going to the XLR output connectors (#33).

### 3. TURNING YOUR MIXER ON

- Adjust all channel **FADERS** and master **LEVEL** controls to their **OFF** positions
- Adjust all channel's **HI**, **MID**, and **BASS** controls and the two master 9 Band **GRAPHICS** to their **center** positions.
- Adjust the Channel "**PAN**" controls to their **center** positions.
- Turn the mixer on by the rear panel **POWER SWITCH** and watch for the **POWER LED**.
- Adjust the **GAIN** controls for the channels being used.

Your mixer is now ready to operate.

### 9. EFF 1 & EFF 2 SEND CONTROLS

The **EFF 1** or **EFF 2** control sends signal (post EQ, post fader) from the channel to the master **EFFECTS 1** or **EFFECTS 2** levels to the internal processors (#19) and to the **EFF 1** or **EFF 2** external output (#32).

### 10. PAN CONTROL

Each channel's **PAN** control allows stereo imaging by panning Left or Right during recordings or live performances. The **PAN** control also works for the sub-mix groups. A center position will send a channel's signal to a pair of sub-group faders (1-2, 3-4 when assigned). By panning hard left, the signal is routed to only sub-group fader 1 or 3 when assigned. Panning hard right routes the signal to sub-mix fader 2 or 4. Dual element pan controls provide 15dB greater channel separation than standard pan controls

### 11. CHANNEL SIGNAL GREEN LED

The **SIGNAL LED** is pre-fader and post EQ. This LED helps the operator verify that the channel is receiving a signal from the mic or instrument inputs even when the channel fader is off.

### 12. CHANNEL RED PEAK LED

This peak indicator is pre-fader and post EQ. If the **PEAK** LED flashes, the channel needs a reduction with the **GAIN** control (#4) to prevent distortion. A "solid" lit **PEAK** LED indicates that the channel has been **MUTED** (#12).

### 13. CHANNEL MUTE SWITCH

The **MUTE** switch will interrupt the channel signal. This feature saves having to reset your faders and monitor sends. The **PEAK LED** (#12) will light solid with no **SIG** LED.

### 14. CHANNEL PFL SWITCH

This switch allows the operator to listen to a channel (pre fader listen) in the headphone mix to set EQ and gain levels as well as see the channel's level at the LED meter output (#28).

### 15. CHANNEL ASSIGNMENT SWITCHES

These switches assign the channel's signal to the Master **L/R** faders or to the **SUB-GROUP** faders 1 & 2, 3 & 4 for sub-mixing in stereo pairs. For mono, **PAN** fully to the left and assign a channel to Sub-Group fader 1 or 3 only. **PAN** fully to the right and assign a channel to Sub-Group fader 2 or 4. Likewise assigning the **L/R** switches sends the channel directly to the main **L** or **R** faders.

### 16. CHANNEL FADER

The **CHANNEL FADER** adjusts the output level of the channel. The signal will go to one or more of the Master Faders, depending on both the Channel Assignment switches and the **PAN** control. Calibrated **60mm FADERS** with audio tapers are featured for smooth fade-outs. Slide all faders down when connecting your inputs. The featured dust covers will hold the faders in place if not used over a period of time.

### 17. PHANTOM POWER SWITCH/RED LED

This switch provides +48v power for condenser mics such as Carvin's **M90S** in groups of 8 channels. This leaves the remaining **MIC** inputs for sources that don't require phantom power. The **LINE** inputs are unaffected.

## 18. STEREO CHANNELS

The last 2 channels are for line level stereo sources such as keyboards, CD/MP3 ETC. Connect either 1/4" audio cables or RCA cables. These stereo channels can also be used as stereo returns if using outboard stereo effects processors.

## MASTER SECTION

### 19. DUAL STEREO 24-BIT EFFECTS

The internal 24-BIT stereo processors receive signals from the channel **EFF1** and **EFF2** controls and the master **EFF1** and **EFF2** controls. If the adjacent **PK** (peak) LED flashes, reduce the level from the channel or master **EFF1** or **EFF2** send controls. A "solid" **PK** LED will show **EFFECTS 1** or **2** have been muted by the **MUTE** switches. The **RETURN** control will adjust the volume level of the selected effects. Remember each channel has its own two **EFFECT** sends that will send the signal to the effects processors. The red **PK** LED will indicate when the effects signal from the channel is distorting. Reduce the level of the channel **EFFECT** control until the **PK** LED stops flashing. **EFFECT AND PARAMETERS**

a.) **ECHO**: When the **SELECT** control is at the "seven O'clock" position, it is selected to the first **ECHO** setting where you get a single repeat echo (minimal regeneration). Turning the **PARAMETER** to 1 will provide the shortest delay time between the original signal and the echo. Increasing the **PARAMETER** to the right will increase the time delay between the original signal and the echo. To increase the number of echo repeats, turn the **SELECT** up.

b.) **REVERB**: When the **SELECT** is at the "ten O'clock" position, it is selected to the first **REVERB** setting. Turning the **SELECT** clockwise will increase the amount of high frequencies in the reverb. Turning the **PARAMETER** to 1 will provide minimal decay time of the reverb. Increasing to the right will increase the reverb decay time.

c.) **CHORUS**: When the **SELECT** is at the "one O'clock" position it is selected to the first **CHORUS** setting. Turning the **SELECT** clockwise will increase the amount reverb in the chorus. Turning the **PARAMETER** to 1 will provide a minimal chorus depth setting. Increasing to the right will increase the chorus depth.

d.) **FLANGE**: When the **SELECT** is at the "four O'clock" position it is selected to the first **FLANGE** setting. Turning the **SELECT** clockwise will increase the flanger's speed. Turning the **PARAMETER** to 1 will provide minimal flanging depth. Increasing to the right will increase the flanger's depth.

To send effects to the monitors, use the **MONITORS** controls in the effects section. Turning the control left sends effects to **MON 1**. Turning to the right sends effects to **MON 2**. The center position on both controls is **OFF**. (#19)

### 20. MASTER MONITOR 1-4 CONTROLS

These are the master outputs for the 4 monitor sends. These correspond to the **MON 1-4** XLR output jacks (#33).

### 21. MASTER EFF 1 & 2 SEND

Sends signals from each channel **EFF 1** & **EFF2** sends to the internal processors and to the **EFF1** & **EFF2** outputs (#32).

### 22. GROUP/SUB-MIX FADERS 1-4

Once a channel has been assigned to one of these faders, the four faders can be used to either submix the **L/R** main mix or control the **SUB GROUP** (#34) output level.

### 23. GROUP ASSIGNMENT SWITCHES

These switches assign/send the sub-group mix to the main **L/R** faders. For mono mixing, assign to both **L/R**. To bus out to the 4 XLR outputs, do not assign to **L/R**.

### 24. MASTER L/R FADERS

These faders adjust the level of the main stereo output created by all channels and groups assigned to **L/R** faders. Output appears at the **L/R** balanced XLR connectors (#36).





**25. MONO/SUB CONTROL**

A mono output is created from the L/R master faders (post) for center, subwoofers, or side fill speakers. The output is at the **MONO/SUB** XLR connector (#37).

**26. HEADPHONE/METER SOURCE**

The stereo **PHONES** control sets the level of the **PHONES** jack (#35). The **L/R, MONO, MON 1-4 & SUB 1-4** switches allow for monitoring of these sources through the headphones and see the levels on the **L/R LED METERS** (#28).

**27. PFL RED LED**

Indicates that the headphone & meters are monitoring only the channels or groups where the **PFL** is switched on.

**28. L/R LED VU METERS**

This group of 10 LED's offer 6 dB increment resolution that give the operator a visual indication of the mixer's output levels, selectable by the **METER SOURCE** or **PFL** switches (#26).

**29. DUAL 9 BAND GRAPHIC EQs** are one octave filters at 63, 125, 250, 500, 1k, 2k, 4k, 8k & 16k Hz centers that offer  $\pm 12$ dB adjustment to enhance the main mix.

**30. USB POWER PORT**

This port supplies +5V USB power to run accessories like LED lighting or to charge MP3 players.

**31. POWER BLUE LED** Verifies the mixer is on.

**32. EFFECTS 1 & 2 OUTPUT JACKS**

1/4" outputs for external effects. Return stereo effects into the stereo channels.

**33. MONITOR 1-4 XLR OUTPUTS**

XLR outputs provide balanced signals for connecting either powered monitors or power amps.

**34. SUB GROUP 1-4 OUTPUT JACKS**

4 balanced 1/4" outputs correspond to the 4 sub group faders. Depending on the intended use of the sub groups, connect multi-track recording devices, powered speakers or power amps.

**35. HEADPHONE JACK**

1/4" stereo jack for headphone or control room output.

**36. LEFT & RIGHT XLR OUTPUTS**

This set of balanced XLR connectors are for connecting the main L/R output to power amps or recording gear.

**37. MONO/SUB XLR OUTPUTS**

A bal. XLR output is featured for side fills or subwoofers.

See Demo [CARVINCHANNEL.COM](http://CARVINCHANNEL.COM)



# ACCESSORIES



## BELTPACK ACCESSORIES



**UX-HM2**  
Headset mic

**UX-LP1** Lavalier mic



**USM16-BP BeltPack & Receiver**



**USM16-MC Handheld Mic & Receiver**



**USMKIT for 2 receivers**



**USB-L**  
USB LED light



**RW1648 ROAD WARRIOR CASES for C2040**  
(NOT AVAILABLE FOR C1240)

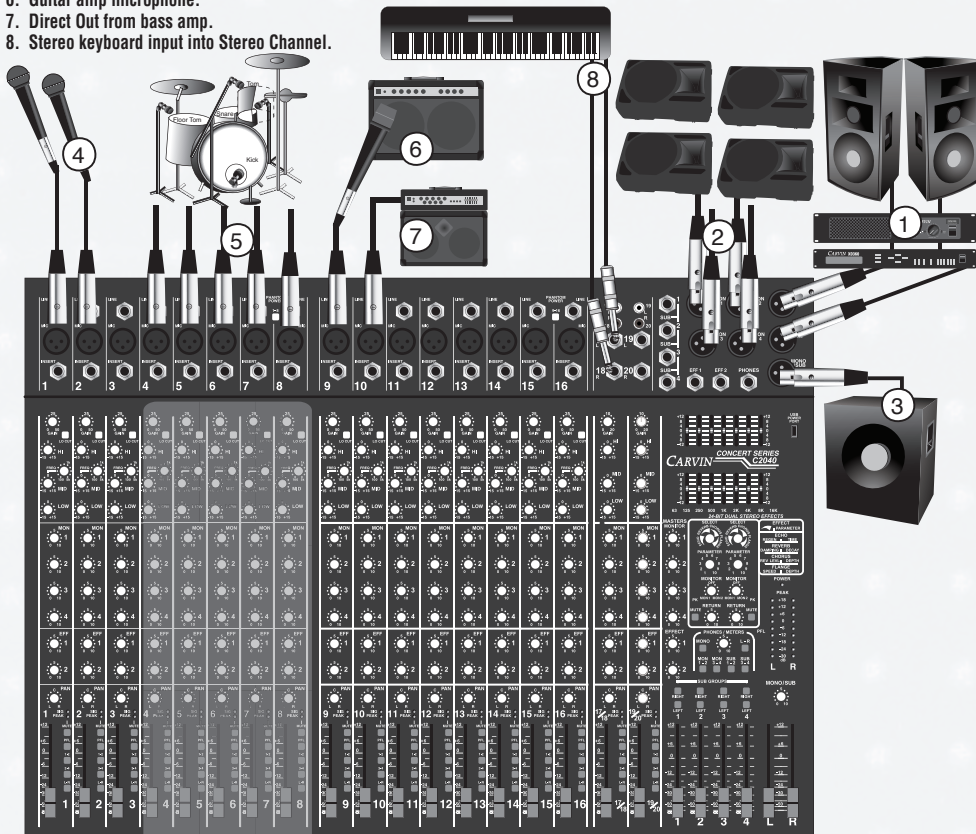
**UX-GT**  
Mini XLR to 1/4" instr. cable

## USM WIRELESS FOR C2040 (NOT AVAILABLE ON C1240)

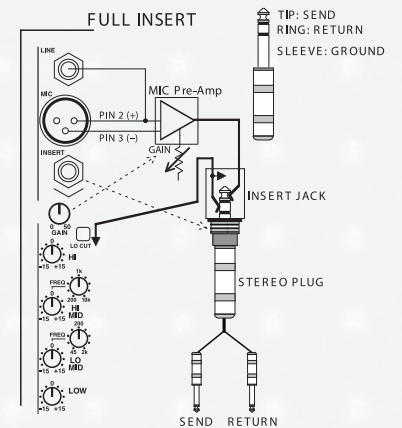
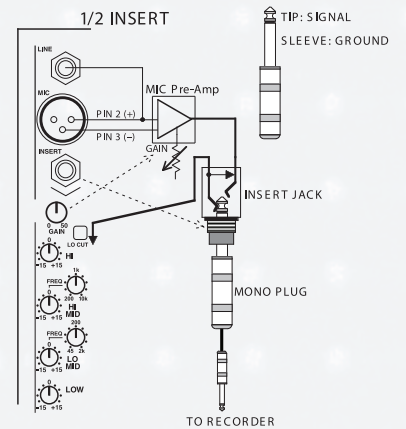
**C2040** features ports for up to two optional wireless receivers. Purchase the antennae kit (USMKIT) and transmitter/receiver systems (USM16-MC or USM16-BP) separately. Choose from the handheld wireless vocal mic or the beltpack transmitter. With the beltpack transmitter, you may purchase the optional guitar cable, lavalier mic, or headset mic.

## BASIC LIVE SOUND SYSTEM

1. Speaker management processor/EQ and power amp for the main speakers on the Left/Right outputs.
2. Self-powered monitors connected to outputs MON1-4
3. Self-powered subwoofer on the MONO/SUB output.
4. Vocal mics.
5. Drum mics on channels 4-8, assigned to sub groups 1 & 2 for sub mixing.
6. Guitar amp microphone.
7. Direct Out from bass amp.
8. Stereo keyboard input into Stereo Channel.

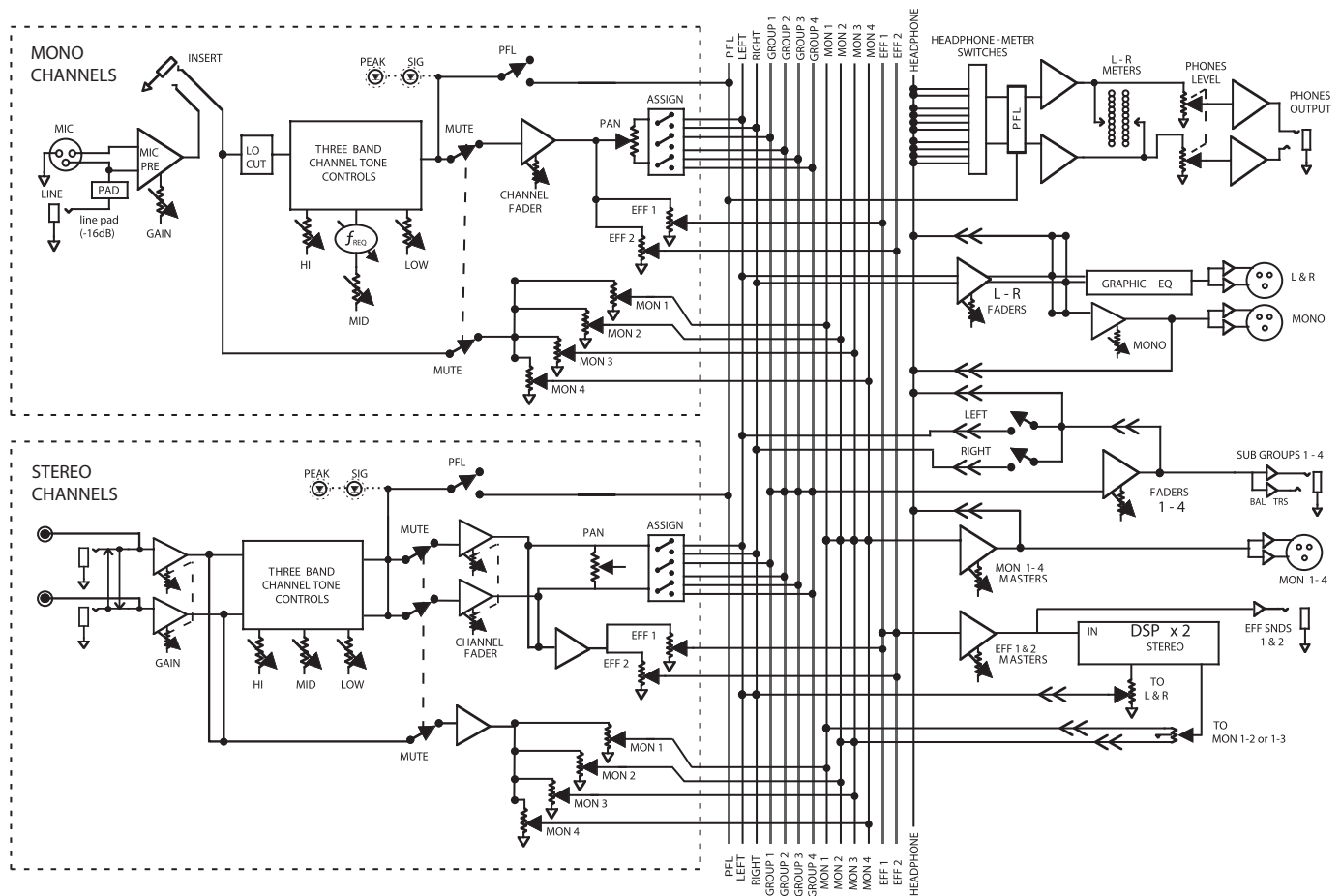



drums on channels 4-8 assigned to sub-mix group faders 1 and 2






# BLOCK DIAGRAM



 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:** The product 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 product should be connected to a power supply only of the type described in the operating instructions or as marked on the unit.

**GROUNDING OR POLARIZATION:** Precautions should be taken so that the grounding or polarization means of the product 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 product.

**SERVICING:** The user should not attempt to service the unit 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 WHITE (BLUE)—Neutral BLACK (BROWN)—Hot**

**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.

**USA LIMITED WARRANTY** For all other customers, see [carvinworld.com](http://carvinworld.com) for warranty information.

CARVIN products are warranted against defective materials and workmanship for 1 YEAR. 3 YEARS for DCML & HD Series Power Amps & active or passive Loudspeakers. 5 YEARS for Guitars, Basses & Cobalt Series. 90 DAYS on Tubes, Wireless Systems & Speaker Components (purchased as individual parts).

The Limited Warranty is void under the following conditions: a) any modified product, b) speakers with burned, damaged or open voice coils, c) moisture damage, d) salt/smoke/contaminants, e) natural disasters, f) accidents, g) abuse, h) lack of reasonable care. 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 of servicing of CARVIN products. CARVIN shall not be liable for incidental or consequential damages including damage to speakers or horn drivers caused by this unit.

Guitars and basses, including Cobalt acoustic guitars, are warranted for 5 years against manufactures' defects. The following are not covered under the limited warranty: a) fret wear, b) damage caused by incorrect use, c) broken truss rods due to improper adjustment, d) crack or warping due to extreme weather conditions or improper storage, e) natural disasters, f) accidents, g) abuse, h) lack of reasonable care.

For USA warranties, CARVIN provides its own service and parts at no charge providing: a) covered under warranty, b) customer provides "proof of purchase" and c) the unit is returned properly packed. Carvin is not responsible for shipping damage. If covered under warranty: 1 to 90 days, Carvin pays ground shipping both ways. 91 days to 365 days, customer pays shipping to Carvin, Carvin pays return ground shipping. Over one year, customer pays shipping both ways.

For USA service, go on line to [carvinservice.com](http://carvinservice.com) and complete the "RMA Repair Form". Ship item including RMA Form and allow up two 2 weeks for CARVIN to receive. You will be contacted by email. If not covered under warranty, a "Flat" service fee is available, or if we are no longer servicing the unit, you may be eligible for a new, similar unit for a discount.

## HELP/ MAINTENANCE

- 1) **PRODUCT WILL NOT TURN ON** - Check the power to the product (circuit breakers, ext. cords, etc.). Check the product's fuse. The product may be OK but occasionally a fuse may blow because of high AC voltage surges. If the proper fuse fails continuously, the product may require servicing.
- 2) **KEEP YOUR PRODUCT LOOKING NEW** - Use a damp cloth to wipe the controls on the front & rear chassis panels. Wipe vinyl coverings with a damp cloth.



LM15 Loudspeakers



DCM2000L Power Amp



XD360 Loudspeaker Management System



EM900 Wireless Ear Monitor System



LM15A Powered Monitors



LS1801NA Powered Subwoofers



M67 Instrument Mic

M68 Vocal Mic

DMK3 Drum Mics

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