



Carvin's new **LS (Live Sound) Series loudspeakers** give new meaning to high performance loudspeaker systems for today's club scene. Building upon the company's long-standing reputation for state-of-the-art systems offering great sonic performance coupled with proven reliability and solid value, the new **LS Series** loudspeakers deliver all the features musicians and mobile DJs demand.

Consisting of eight models encompassing three 2-way systems, three 3-way systems, and two subwoofer systems, the **LS Series** is ideally suited to address a wide range of sound reinforcement system requirements—from intimate clubs to large scale, high impact music venues. With key features like 16-gauge perforated steel grills to protect the drivers, recessed steel handles for easy transport, high order – low loss biampable crossovers that ensure high intelligibility of spoken word and accurate reproduction of music sources, plus Neutrik Speakon™ and quarter-inch connectors across all models, Carvin's new **LS Series** loudspeakers are just what your audience has been waiting for!

Going one step further, all **LS Series** loudspeaker enclosures utilize multi-layered, cross grain laminated Baltic birch plywood construction. Why is this important? Unlike other materials, plywood construction results in rigid enclosure walls that reduce flex and sonic coloration caused by cabinet resonance, with the added benefit of a structurally more robust enclosure designed to handle the rigors of the road. Finished with great-looking, rugged Duratuff™ coverings, Carvin's new **LS Series** loudspeakers look every bit as compelling as they sound!



RECEIVING INSPECTION

INSPECT YOUR LOUDSPEAKER FOR DAMAGE which may have occurred during shipping. If damage is found, please notify the shipping company & CARVIN.

SAVE THE CARTON & ALL PACKING MATERIALS. In the event you have to re-ship your unit, always use the original carton and packing material. 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 for your records. Return the warranty card with your name and comments to us, or register online at:

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

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

LIMITED WARRANTY

Parts and labor are covered for 3 years on manufacturer's defects. Warranty does not cover burned out drivers caused by excessive power or distortion, or physical damage caused by general use, moisture or dust. **CAUTION:** Square wave distortion from power amps can destroy drivers much faster than clean RMS power. The power generated by the APS internal power amps has the capacity to damage the drivers, in which case they would not be covered under warranty.

SERVICE

In the USA, please call 800-854-2235 for a RMA number (return authorization number). Write this number on the box and enclose a description of the problem. Prepay to Carvin 12340 World Trade Drive, SD, CA 92128

Outside the USA, contact your dealer or go to <http://www.carvin-world.com> for your nearest service center. Include a written description of the problem with serial number and date of purchase.





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.



THIS UNIT CONTAINS HIGH VOLTAGE INSIDE!

REFER SERVICING TO A QUALIFIED TECHNICIAN

IMPORTANT! FOR YOUR PROTECTION, PLEASE READ THE FOLLOWING:

WATER AND MOISTURE: Do not expose this appliance to rain or moisture. Do not use this apparatus near water (in a wet basement, near a swimming pool, bathtub etc). Care should be taken so that liquids are not spilled or splashed onto the unit. Do not place objects filled with liquids such as beverage containers on this apparatus.

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 unit. Unplug during lightning storms.

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

POWER CORD: 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 and the point where they exit from the appliance. The plug or power inlet is the disconnect device and shall remain readily operable.

PLACEMENT: Do not block ventilation openings. Do not install near heat sources such as radiators, stoves or other products that produce heat. Do not install in a confined area. Use only mounting hardware such as brackets and tripods recommended by the manufacturer.

SERVICING: The user should not attempt to service the unit. All 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.

LIMITED WARRANTY

Your Carvin product is guaranteed against failure for 3 YEARS 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. 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 must call for a return authorization number. 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.

HELP SECTION

1) **UNIT WILL NOT TURN ON:** Check the power to the AC cord. Check for tripped circuit breakers, unplugged extension cords or power-strip switches that may be turned off. Check the fuse or circuit breaker on the unit if available. If the fuse has been replaced with the proper value and the fuse fails again, or the internal circuit breaker activates after reset, the unit will require servicing.

2) **NO OUTPUT with POWER light ON:** Shipping damage will be the primary reason for your product to not function properly. Please give us a call to help you determine the problem.

3) **KEEP YOUR UNIT LOOKING NEW:** Use only a dry cloth to wipe the control and venting areas. Surfaces without openings may be cleaned with a damp cloth.

2-WAY SYSTEMS SPECS:

	LS1002
Frequency Response +/- 3dB	85Hz - 20kHz (72Hz - 10dB)
Power Capacity	200 W continuous, 400 W peak
Sensitivity	98 dB SPL, 1W / 1M
Calculated Max SPL	124 dB
Nominal Directivity	60 degrees HxV
Nominal Impedance	8 Ohms
Enclosure Type	Vented Bass Reflex
Enclosure Construction	12mm Baltic birch cross grain laminated plywood
Recommended Power Amp	200 W - 400W
Dimensions	12.4"W x 11"D x 18"H
Weight	23 lbs.

	LS1202
Frequency Response +/- 3dB	76Hz - 18kHz (70Hz - 10dB)
Power Capacity	300 W continuous, 600 W peak
Sensitivity	97 dB SPL, 1W / 1M
Calculated Max SPL	125 dB
Nominal Directivity	90 degrees HxV
Nominal Impedance	8 Ohms
BiAmp Impedance	LF 8 Ohms, HF 16 Ohms
Enclosure Type	Vented Bass Reflex
Enclosure Construction	12mm Baltic birch cross grain laminated plywood
Recommended Power Amp	300 W - 600W
Dimensions	15"W x 13.2"D x 24.5"H
Weight	33 lbs.

	LS1502 / 1502A
Frequency Response +/- 3dB	53Hz - 18kHz 47Hz - 10dB) / 350w RMS (Hi Freq: 50w @ 16 ohms, Lo Freq. 300w @ 8 ohms)
Power Capacity	400 W continuous, 800 W peak
Sensitivity	100 dB SPL, 1W / 1M
Calculated Max SPL	129 dB
Nominal Directivity	90 degrees HxV
Nominal Impedance	8 Ohms
BiAmp Impedance	LF 8 Ohms, HF 16 Ohms
Enclosure Type	Vented Bass Reflex
Enclosure Construction	12mm Baltic birch cross grain laminated plywood
Recommended Power Amp	400 W - 800W
Dimensions	18"W x 14"D x 27.5"H
Weight	43 lbs.

3-WAY SYSTEMS SPECS:

	LS1503/1503A
Frequency Response +/- 3dB	52Hz - 20kHz (46Hz - 10dB) / 425w RMS (Hi Freq: 50w @ 16ohms, Mid Freq: 75w @ 16 ohms, Lo Freq. 300w @ 8 ohms)
Power Capacity	400 W continuous, 800 W peak
Sensitivity	101 dB SPL, 1W / 1M
Calculated Max SPL	130 dB
Nominal Directivity	90 degrees H x 60 degrees V
Nominal Impedance	8 Ohms
BiAmp Impedance	LF 8 Ohms, MF/HF 8 Ohms
Enclosure Type	Vented Bass Reflex
Enclosure Construction	12mm Baltic birch cross grain laminated plywood
Recommended Power Amp	400 W - 800W
Dimensions	18.75"W x 15.5"D x 24"H
Weight	58 lbs.

	LS1523 / 1523A
Frequency Response +/- 3dB	51Hz - 20kHz (45Hz - 10dB) / 900w RMS (Hi Freq: 80w @ 16 ohms, Mid Freq: 120w @ 8 ohms, Lo Freq. 700w @ 4 ohms)
Power Capacity	800 W continuous, 1600 W peak
Sensitivity	101 dB SPL, 1W / 1M
Calculated Max SPL	133 dB
Nominal Directivity	90 degrees H x 60 degrees V
Nominal Impedance	4 Ohms
BiAmp Impedance	LF 8 Ohms, MF/HF 8 Ohms
Enclosure Type	Vented Bass Reflex
Enclosure Construction	12mm Baltic birch cross grain laminated plywood
Recommended Power Amp	800 W - 1600W
Dimensions	22.5"W x 19.75"D x 46.75"H
Weight	105 lbs.

	LS2153
Frequency Response +/- 3dB	51Hz - 20kHz (45Hz - 10dB)
Power Capacity	800 W continuous, 1600 W peak
Sensitivity	101 dB SPL, 1W / 1M
Calculated Max SPL	133 dB
Nominal Directivity	90 degrees H x 60 degrees V
Nominal Impedance	4 Ohms
BiAmp Impedance	LF 8 Ohms, MF/HF 8 Ohms
Enclosure Type	Vented Bass Reflex
Enclosure Construction	12mm Baltic birch cross grain laminated plywood
Recommended Power Amp	800 W - 1600W
Dimensions	16.5"W x 14.75"D x 43.75"H
Weight	71 lbs.

SUBWOOFER SYSTEMS:

	LS1801 / 1801A
Frequency Response +/- 3dB	35Hz - 150Hz (29Hz - 10dB) / 700w RMS @ 4 ohms
Power Capacity	800 W continuous, 1600 W peak
Sensitivity	98 dB SPL, 1W / 1M
Calculated Max SPL	130 dB
Nominal Directivity	N/A
Nominal Impedance	4 Ohms
Enclosure Type	Vented Bass Reflex
Enclosure Construction	12mm Baltic birch cross grain laminated plywood
Recommended Power Amp	800 W - 1600W
Dimensions	19.5"W x 22"D x 23.5"H
Weight	71 lbs.

	LS1802
Frequency Response +/- 3dB	30Hz - 150Hz (24Hz - 10dB)
Power Capacity	1600 W continuous, 3200 W peak
Sensitivity	102 dB SPL, 1W / 1M
Calculated Max SPL	137 dB
Nominal Directivity	N/A
Nominal Impedance	4 Ohms
Enclosure Type	Vented Bass Reflex
Enclosure Construction	12mm Baltic birch cross grain laminated plywood
Recommended Power Amp	1600 W - 3200W
Dimensions	39.5"W x 22"D x 23.5"H
Weight	119 lbs.

	LS1802
Frequency Response +/- 3dB	30Hz - 150Hz (24Hz - 10dB)
Power Capacity	1600 W continuous, 3200 W peak
Sensitivity	102 dB SPL, 1W / 1M
Calculated Max SPL	137 dB
Nominal Directivity	N/A
Nominal Impedance	4 Ohms
Enclosure Type	Vented Bass Reflex
Enclosure Construction	12mm Baltic birch cross grain laminated plywood
Recommended Power Amp	1600 W - 3200W
Dimensions	39.5"W x 22"D x 23.5"H
Weight	119 lbs.

The power generated by the APS internal power amps has the capacity to damage the drivers, in which case they would not be covered under warranty.

MULTI-WAY CROSSOVER CONNECTIONS (non-powered speakers)

Use either 1/4" or Speakon™ cables for connecting to the power amp and daisy chaining to an additional speaker. For high powered and biamp applications, use Speakon™ cables only.



1. 1/4" inputs from power amp output (full range input only).
2. Speakon™ input from power amp (full range or biamp).
Note: the Speakon pin configuration for biamping is:
1+ LF Positive / 1- LF Negative 2+ MF/HF Positive / 2- MF/HF Negative
3. Full Range/Biamp mode switch
4. Speakon™ through wired in parallel with input Speakon™.
5. 1/4" through wired in parallel with 1/4" input.

SUBWOOFER CROSSOVER CONNECTIONS



1. 1/4" inputs from power amp output.
2. Speakon™ input from power amp.
Note: the Speakon pin configuration is:
1+ LF Positive / 1- LF Negative 2+ not connected / 2- not connected
3. Crossover/Bypass mode switch to bypass internal crossover (must use active crossover when in bypass mode)
4. Speakon™ through wired in parallel with input Speakon™.
5. 1/4" through wired in parallel with 1/4" input.

Instructions designate typical crossover configuration.

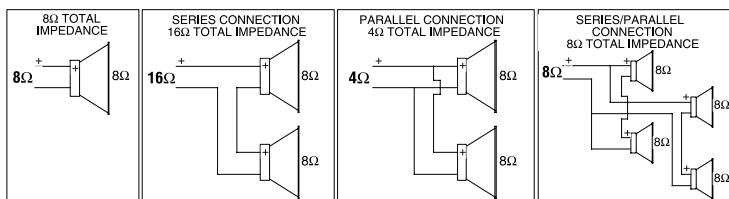
SUGGESTIONS FOR OPTIMAL PERFORMANCE

- To help control feedback and to correct for venue characteristics, use a graphic EQ.
- For optimal coverage and dispersion, elevate high frequency horn above eye level.
- For optimal headroom, select an amplifier with a power capacity equal to or up to double the rated program power capacity of the loudspeaker system.
- Ensure all amplifiers are supplied and connected to properly rated AC power circuits. Underpowering amplifiers may cause premature clipping distortion.

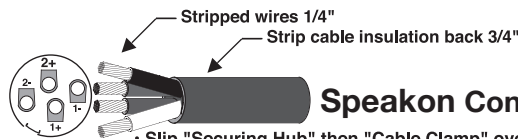
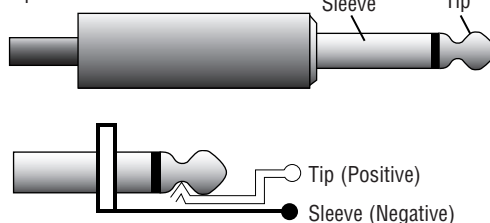
SPEAKER CABLES Use either Carvin's PRO50S speaker cable for up to 50' or high-current 12GA Speakon™ cables for lengths up to 150'. 18GA cables are not recommended. You can DAISY-CHAIN up to one additional speaker per cable by using the OUTPUT connector. Be sure the total impedance to the amplifier is not lower than the amplifier's minimum impedance.

TYPICAL LOUDSPEAKER IMPEDANCE CONFIGURATIONS

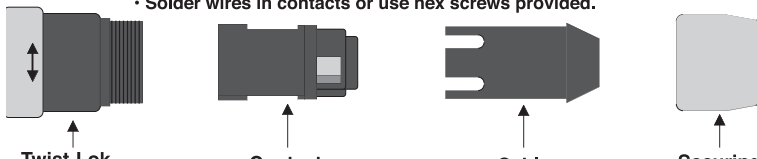
Individual speaker or speaker cabinet wiring examples for total impedance.



Standard 1/4" Phone Plug
Tip-Sleeve



- Slip "Securing Hub" then "Cable Clamp" over cable before attaching wires.
- Connection Configuration:
Black (1+) / positive
White (1-) / negative
Red (2+) / positive
Green (2-) / negative
- Solder wires in contacts or use hex screws provided.



APS Powered Speakers



Carvin's APS (Active Powered Systems) amplification packs take the guesswork out of selecting the ideal power source to drive your loudspeakers. With bi-amped and tri-amped models designed to handle the most demanding applications, the APS amplifiers are perfectly mated with—the **LS1502A**, **LS1503A**, and **LS1523A**—creating optimally designed powered loudspeaker systems that are ready for anything you throw at them. There's even one APS power pack created specifically to generate the bone crushing impact of our **LS1801A** subwoofer. APS-based LS loudspeaker systems make setup and operation easier as well, with less gear to haul. Feed your mixer's output directly to these loudspeaker systems, and you're ready to rock!

APS POWER AMP SPECS:

2-WAY BI-AMPED – LS1502A

350w RMS (Hi Freq: 50w @ 16 ohms, Lo Freq: 300w @ 8 ohms)

3-WAY TRI-AMPED – LS1503A

425w RMS (Hi Freq: 50w @ 16ohms, Mid Freq: 75w @ 16 ohms, Lo Freq: 300w @ 8 ohms)

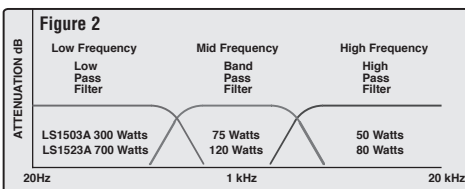
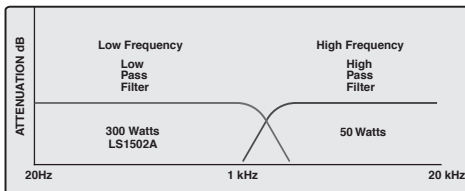
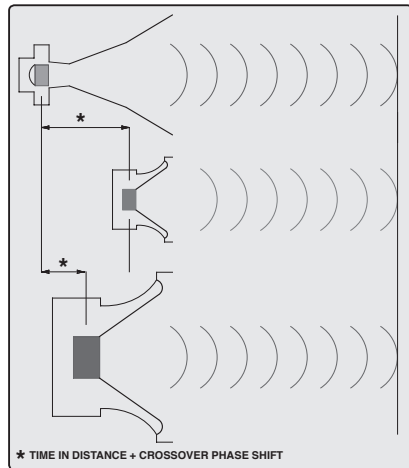
3-WAY TRI-AMPED – LS1523A

900w RMS (Hi Freq: 80w @ 16 ohms, Mid Freq: 120w @ 8 ohms, Lo Freq: 700w @ 4 ohms)

SUB WOOFER – LS1801A 700w RMS @ 4 ohms

ALL MODELS: FREQ. RESPONSE: 20 to 20kHz, THD less than .05% @ 90%, .1% at full power, SLEW RATE: 50V/μs, ACTIVE EQ: ± 6 dB @ 100 Hz, 100 Hz to 5 kHz mid sweep, 10kHz, EQ bypass switch, (SUB WOOFER: 24dB/Octave @ 80 & 120 Hz) • Relay muting and Speaker Guard™ protection, Peak and protection & power on indicators, On-Off power switch, Power Req. 120VAC 60 Hz . 240 AC/50Hz model available

All loudspeaker components are Time-Aligned for greater intelligibility and clarity



Bi-amped or Tri-amped – active crossovers and power amps

APS HOOK-UP

1. INPUT/THRU OUTPUT Use the balanced XLR or 1/4" connectors featured on the rear control panel. Using a balanced source will reduce noise which may be picked up by the cable. You may DAISSY-CHAIN as many APS systems as you wish. All connectors are wired in parallel.

2. APS EQUALIZATION The APS powered loudspeakers offer a by-passable 3-band mid sweep equalizer for custom tuning to the acoustical environment. The EQ system is engineered specifically for the APS, featuring a boost and cut range of ±6dB to prevent radical adjustments that could otherwise compromise the sound of the system. The Mid-band sweep is particularly useful for enhancing critical mid range frequencies for stage monitoring or for cutting certain frequencies to compensate for room resonances. Press the "EQ IN" switch to activate the equalizer. The BLUE LED displays when the EQ is active.

3. LEVEL CONTROL The LEVEL control adjusts the output volume of the APS. Start by setting the LEVEL at "0". Weak input signals can be boosted by setting the LEVEL at "+6". Strong signals can be reduced by turning the LEVEL toward "-12". The RED LED will flash if the internal power amps start to clip. Turn the LEVEL control down to avoid clipping. Damage to the drivers can result from operating at a level where the RED CLIP LED is constantly illuminated.

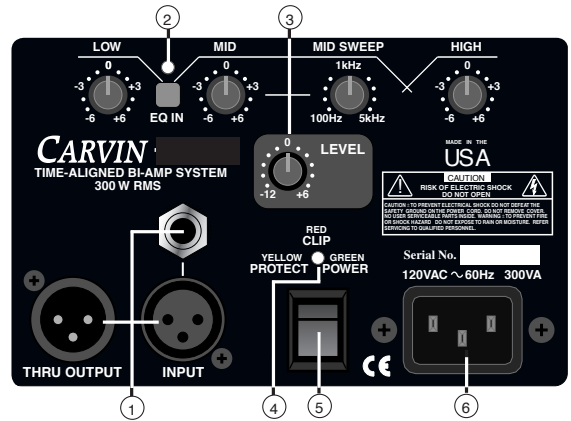
4. POWER/PROTECT/CLIP INDICATOR Power up your audio source first, then turn on the APS with the power switch. When the system is active, the LED will indicate GREEN. When shutting down turn off the APS first, then turn off the mixer. If any of the power amps are clipping, the LED will indicate RED and you should reduce the output level. If the system should go into protect mode, the LED will indicate YELLOW and the power amps will shut off. This may occur if; a) the system is overheated due to clipping the power amps for an extended period of time, b) one of the internal drivers developed a short or c) the power amps require service.

5. POWER Push this switch to the UP position to apply power to the unit. The POWER LED will light to show the system is on.

6. AC POWER Use a standard grounded AC cord. Whenever possible, use dedicated circuits for powered speakers. The powered speakers are available in either 120V or 240V models.

7. CROSSOVER FREQUENCY SWITCH The CROSSOVER FREQUENCY switch selects the crossover point for the APS. The 120Hz out setting is generally used with small to mid sized speakers in your setup. Almost all 12" and 15" woofers will benefit from the 120Hz setting. The 80Hz (switch in) setting is generally used with larger 18" woofers.

APS BI-AMP/TRI-AMP REAR PANEL:



LS1801 SUBWOOFER

8. CROSSOVER BYPASS SWITCH The crossover bypass switch bypasses the internal active crossover allowing the use of an outboard active crossover.

