

CUPM SERIES
Digital Mini Amplifier



CUPM4004D

CUPM1000ID

MANUAL

Cerwin Vega Mobile Amplifier

Congratulations for purchasing Cerwin Vega Mobile amplifier for your car audio system. You have chosen Cerwin Vega Mobile because you deserve the best!

Cerwin Vega Mobile amplifier are designed and engineered to reproduce great sound quality for many years of listening enjoyment in your vehicle! We highly recommend that your new speakers be installed by an authorized Cerwin Vega Mobile dealer. Your authorized dealer can professionally assemble / disassemble the interior of your vehicle and set the proper amplifier placement for ideal sound quality.

If you decide to install the amplifier by yourself, please thoroughly read through this manual before getting started. This manual will help familiarize yourself with these speakers and guide you through the installation process and procedures.

Please contact your local authorized Cerwin Vega Mobile dealer if you have any questions regarding the instructions in this manual.

If you require additional assistance, please contact the Cerwin Vega Mobile Technical Support Department during business hours at 213-261-4161

Installation

WARNING: Prolonged exposure to sound pressure levels in excess of 100dB can cause permanent hearing loss. Cerwin Vega Mobile amplifiers can exceed that level so please exercise restraint when listening and enjoying your new amplifier.

GENERAL PRECAUTIONS

- This unit is designed for negative ground 12V DC operation only. (some older english vehicles have a positive ground!)
- Total system impedance must not be less than 2 ohms, in a bridged OR stereo configuration (monoblocks are 1 ohm stable)
- Avoid installing the unit where:
 - It would be subject to high temperatures, such as from direct sunlight or hot air from the heater.
 - It would be exposed to rain or moisture.
 - It would be subject to dust or dirt.
- Do not cover the amplifier with carpet or wires.
- Do not use the amplifier with a weak car battery. Optimum performance depends on a normal battery supply voltage.
- For safety reasons, keep the volume of your car audio system moderate while driving your vehicle so that you can still hear normal traffic sounds and emergency vehicles outside your car.

MOUNTING PRECAUTIONS

Although Cerwin Vega Mobile amplifiers incorporate heat sinks and protection circuits, mounting the amplifier in a tight space without any air movement can still damage internal circuitry over time. Choose a location that provides adequate ventilation around the amplifier. For easy system set-up, mount the amplifier so the side panel controls will be accessible after installation. To increase thermal run times on low impedance loads, an additional fan is recommended, remember any moving air across the amplifier will reduce heat. In addition, observe the following precautions:

1. Using a felt pen mark, mark the mounting hole locations.
2. Mounting the amplifier on carpet will significantly reduce air flow, resulting in reduced thermal run times.
3. Mount the amplifier on a solid surface. Avoid mounting to sub woofer enclosures or areas prone to vibration. Do not install the amplifier on plastic or other combustible materials.
4. Prior to mounting the amplifier, make sure not to cut or drill into the fuel tank, fuel lines, brake lines (under chassis) or electrical wiring.

WIRING PRECAUTIONS

1. Before installation, make sure the source unit power switch is in the OFF position.
2. Disconnect the negative (-) lead of the battery before making any power connections.
3. When making connections, be sure that each one is clean and secure. Insulate all of your connections. Failure to do so may damage your equipment.
4. A secure clean ground connection is critical to the performance of your amplifier. Connect the ground directly to the car chassis to minimize resistance and avoid any noise problems.
5. Add an external fuse on the amplifier's positive (+) power lead and connect it as close as possible to the vehicle's (+) battery terminal. 18 inches is the usual dimension. Use a rating that equals the total current consumption at full output of all amplifiers in the system. This external fuse will protect the vehicle from short circuits that can cause a fire.

VEHICLE ELECTRICAL SYSTEM

Amplifiers (regardless of brand name) will put an increased load on the vehicle's battery and charging system. Cerwin Vega Mobile recommends checking your alternator and battery condition to ensure that the electrical system has enough capacity to handle the increased load of your stereo system. Original equipment electrical systems which are in good condition should be able to handle the extra load of any CVM amplifier without problems, although battery and alternator life can be reduced depending on your individual listening habits. To maximize the performance of your amplifier, we suggest the use of a reserve power "Stiffening" capacitor (1 Farad per 1000W).

WARNING:

Avoid running power wires near the low level input cables, antenna, power leads, sensitive equipment or harnesses. The power wires carry substantial current and could radiate noise into the audio system through the audio cables.

1. Plan the wire routing as described in the "Importance of Pre-Planning" section. Keep RCA cables close together but isolated from the amplifier's power cables and any high power auto accessories, especially electric motors. This is done to prevent coupling the noise from radiated electrical fields into the audio signal. When feeding the wires through the firewall or any metal barrier, protect them with plastic or rubber grommets to prevent short circuits. Leave the wires long at this point to adjust for a precise fit at a later time.

2. Prepare the power wire for attachment to the amplifier by stripping 5/8 inch (15.9mm) of insulation from the end of the wire. Insert the bare wire into the B+ terminal. And tighten the set screw to secure the cable in place.

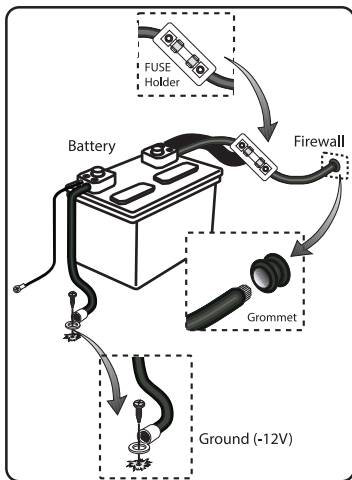
WARNING:

The B+ cable **MUST** be fused 18" or less from the vehicle's positive battery post. Choose a location to install a waterproof fuseholder under the hood and ensure connections are water tight. If you do not use the appropriate fuseholder, the connection will eventually suffer corrosion from moisture and heat.

3. Trim the power cable within 18 inches (45.7mm) of the positive battery post and splice an in-line fuse holder. **DO NOT** install the fuse at this time.

4. Strip 1/2 inch (12.7mm) from the battery end of the power cable. Crimp and solder a large ring terminal to the cable. Connect the ring terminal to the positive (+) battery post.

FUSE WIRE DIAGRAM



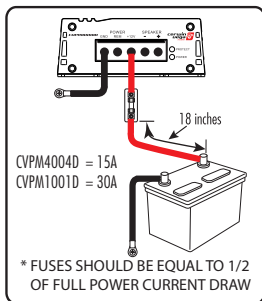
Installation

- Prepare the ground wire for attachment to the amplifier by stripping 5/8" of insulation from the end of the wire. Always use a wire of the same gauge as the power connection, never smaller. Insert the bare wire into the GND terminal and tighten the set screw to secure the cable in place. Prepare the chassis ground by scraping any paint from the metal surface and thoroughly clean the area of all dirt and grease. Strip the other end of the wire, crimp and solder a ring connector. Fasten the cable to the chassis using a non-anodized screw with a star washer.

WARNING: It is important to upgrade the ground connection between the negative (-) battery post and the vehicle body or chassis to achieve optimum electrical performance.

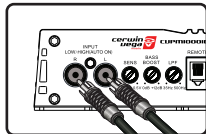
- Prepare the REM turn-on wire for attachment to the amplifier by stripping 5/8 inch (15.9mm) of insulation from the end of the wire. Insert the bare wire into the REM terminal and tighten the set screw to secure the wire in place. Connect the other end of the REM wire to a switched 12 volt positive source. The switched voltage is usually taken from the source unit's remote amp turn on lead. If the source unit does not have this output available, the recommended solution is to wire to an accessory terminal in the car's fuse block using a relay to isolate the amplifier from the vehicles accessory circuit. This however will turn the amplifier on and off with the ignition key, regardless of whether the car stereo is on or off.

FUSE CONNECTION DIAGRAM



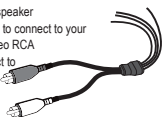
- Securely mount the amplifier to the vehicle or amp rack. Be careful not to mount the amplifier on cardboard or plastic panels. Doing so may enable the screws to pull out from the panel due to road vibration or sudden vehicle stops.
- Connect from source signal by connecting the RCA audio cables (or speaker wires) to the input jacks at the amplifier.

RCA CONNECTION DIAGRAM

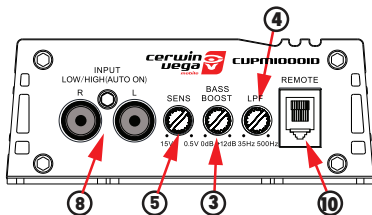


SPEAKER LEVEL INPUT (OPTIONAL)

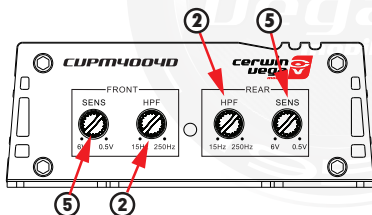
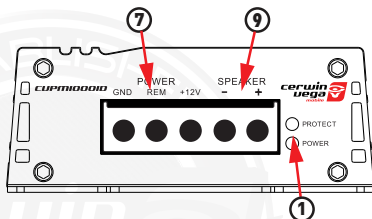
The CVPM series amplifiers can take speaker level in. The easiest and cleanest way to connect to your radios speaker outputs is to buy a stereo RCA cable and just strip the wires to connect to the OEM amplifier/Headunits speaker outputs then plug directly into the amplifiers RCA input harness.



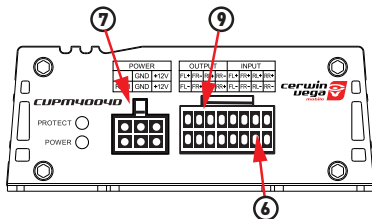
- Connect the car speakers. Speakers impedance should NEVER be less than 2 Ohms stereo, 4 Ohms bridged (the mono block's are stable into 1 ohms). For most applications 18 gauge wire is adequate for the speaker leads. For leads in excess of ten feet, 16 gauge wire is recommended. Strip the speaker wires 1/2" (12.7mm) and insert into the speaker terminal block, then tighten the set screw to secure into place. When wiring the speakers, pay careful attention to the polarity of the terminals on the speakers and make certain they correspond to the polarity on the amplifier. DO NOT chassis ground any of the speaker leads as unstable operation or damage to the amplifier and/or speaker may result.



**CVPM10001D
MONOBLOCK**



**CVPM4004D
4 CHANNEL**



Features

- ① Status LED's** - These lights indicate when the amplifier is powered up normally and when there is a protection fault. The Protect LED is laminated when there is a problem with your amplifier. Please contact your authorize CVM dealer or call CVM's technical support.
- ② HPF Crossover Adjustment (CVPM400.4)** - Use this adjustment to select the crossover point. Remember that you must adjust the High Pass position (HPF) as the HPF is ALWAYS engaged. The HPF is limited between 15 - 250 Hz.
- ③ Vega Bass Boost** - This control adds 0 to +12dB of boost at 45Hz. Be cautious when adding boost to some subwoofer systems as they may not be able to handle the additional low frequency boost. In the 0dB position, no bass boost is added.
- ④ LPF Crossover Adjustment** - Use this adjustment to select the crossover point. Remember that you must adjust the Low Pass position (LPF) as the LPF is ALWAYS engaged. The LPF is limited between 35 - 500 Hz.
- ⑤ Input Gain Adjustment (SENS)** - This control matches the preamp stage of the Cerwin-Vega Mobile amplifier to your source unit. This is NOT a volume control. The range is between approx 150mV -12V.
- ⑥ Input** - The RCA jacks allow for a normal Left and Right channel signal input. Both HI and LO level (up to 6Vac). Simply connect to the source unit using RCA type audio cables (cut up an extra RCA cable to use to connect to speaker leads), keeping them away from power wiring wherever possible to reduce risk of noise.
- ⑦ Power Input Connections** - These connections are for input power, chassis ground, and remote turn-on. Use a minimum of 8 gauge wiring for power and ground connections, 18 gauge for remote turn-on. . 4 Gauge is recommended for the mono blocks. The terminals will handle up to 8 gauge wiring with no problem whatsoever (4 gauge on the mono block). Be sure any wiring that passes through metal has a grommet!
- ⑧ Power Fuses** - Standard automotive type ATM "Mini" fuses are used on these Cerwin Vega Mobile amplifiers. These are located INSIDE the amplifier. Always replace with the correct fuse size. Never insert fuses of higher values. Doing so will void the warranty of your Cerwin Vega Mobile amplifier. Also include a main fuse at the connection to the vehicle battery within 18 inches of the positive battery post. It is also important to upgrade the connection between the negative battery post and the chassis of the vehicle. This greatly reduces possibilities of weak electrical "links" in the circuit.
- ⑨ Speaker Output Terminals** - Connect your speakers to these terminals. Stereo connections are connected as labeled. Bridged connections use the LEFT + and RIGHT - as the two connections. The 2 and 4 channel amplifiers will perform into 2 Ohm stereo loads or 4 Ohm bridged loads. DO NOT run 2 Ohm bridged loads on these amplifiers! The mono blocks will run 2 ohms mono! ONLY.
- ⑩ Remote Level Control** - This port is for the remote level control. The control is intended to allow the user to control the level of gain up to the maximum adjustment level set on the amplifier. The control does not add additional boost, it only attenuates the setting that is fixed at the amplifier's control panel.

The crossovers are ALWAYS engaged. Meaning "ON" ..you CANNOT turn them off. It is NOT an issue as the lowest HPF Frequency is 15Hz(CVPM4004D) which is, in reality, fis ull range. The HPF is used to protect Coaxial and Component speakers from damage. In actuality NO Co-axial or Component speaker system is "full range". Be careful and protect your speakers. Begin by tuning the HPF frequency control between 60Hz and 80Hz for your Hi Pass Speakers (coaxial or Component).

On the other hand the LPF control (only on the CVPM10001D amplifier) enables frequencies below the cutoff point to pass. For a subwoofer system begin tuning with the frequency set between 80Hz and 120Hz.

To adjust the gain setting, turn the amplifier gains all the way down (counterclockwise). If using a remote level control (CVPM10001D/CVPM4004D) plug the remote level control into the amplifier and turn it to about 1/2 way up. Next turn the source unit volume up to almost full volume (usually about 2/3rds of the way up) or until the output starts to distort on an oscilloscope. This will be NEARLY full volume on most source units, perhaps one or two "clicks" down from maximum volume. Next, increase the amplifier gain setting until adequate volume is achieved, or until distortion is audible and then turn it down a bit until the distortion is inaudible.

NOTE:

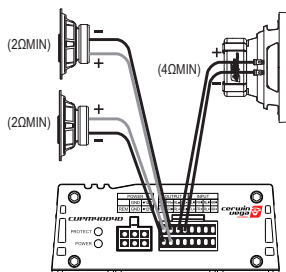
Ideal signal to noise and dynamic range are achieved with the gain at minimum. Most users find adequate gain and volume is achieved at less than halfway in the adjustment range. Avoid setting the amplifier gain very high as noise and distortion will increase significantly. For a more in depth level setting (gain adjustment) procedure AND system designs, visit the CVM website.

The HPF or LPF crossover adjustment can now be fine tuned. If you are using the amplifier in a HPF configuration and would like the system to be a little bit louder you can increase the HP Filter frequency and reset the "Gain" of the amplifier. Raising the HPF frequency up too high, however will cause a loss of mid range and bass. If you are using the amplifier in a LPF filter configuration and you hear voice or vocals coming from your subwoofer system you can turn the LPF Filter frequency down (lower).

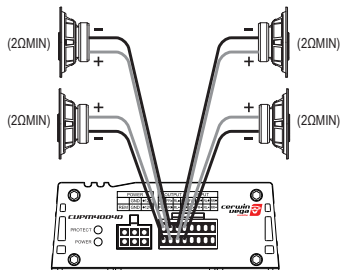
After setting the input gain adjustment and crossover, you may choose to add a small amount of "Vega Bass Boost" in the low frequency region. Remember that the Bass Boost feature will not fix a poorly designed subwoofer enclosure or subwoofers that didn't sound good to begin with.

1. Make sure any bass EQ, loudness or low frequency equalization from the source unit is set to OFF or FLAT.
2. While playing the same musical selections used during the gain setting process, slowly increase the level of the Bass Boost. You should be able to notice a obvious change between 0 and +12dB. If you do not notice much difference, then it will not serve any benefit to increase the boost further.
3. If the boost has audible benefits without adding appreciable distortion, find a level that suits your taste. Remember: it's much easier to construct the right subwoofer enclosure for your listening preferences than relying on a bass boost control to do the job!

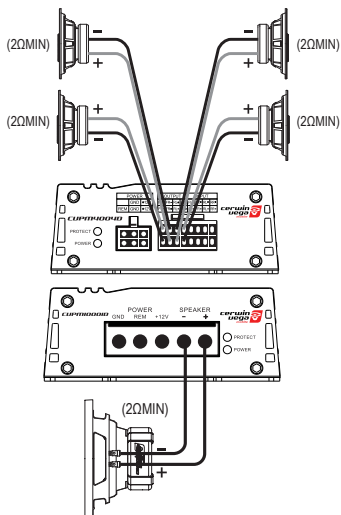
Three Channel Mode: CVPM4004D



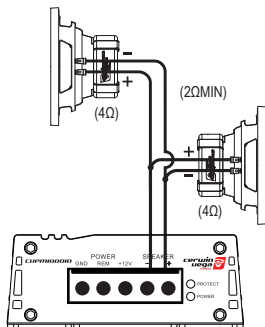
Four Channel Mode: CVPM4004D



5 Channel setup: CVPM4004D/10001D



Two Woofers Mono Block: CVPM10001D



PRODUCT SPECIFICATIONS

	CVPM4004D	CVPM10001D
RMS Power Rating (rated at 0.1% THD)		
Max Power	400W MAX	1000W MAX
RMS Power (2 Ω)	90W x 4 @ 2 Ω RMS	
RMS Power (4 Ω)	60W x 4 @ 4 Ω RMS	
Bridged (mono 2 Ω)	N/A	500W x 1 @ 2 Ω RMS
Bridged (mono 4 Ω)	240W x 2 @ 4 Ω RMS	310W x 1 @ 4 Ω RMS
Type		
Topology	Full Class D	Full Class D
Power Supply		
Power Supply	Full PWM	Full PWM
Power Supply (Threshold)	10.0VDC - 17.0VDC	10.0VDC - 17.0VDC
Idle Current	(0.7A)	(0.7A)
Distortion		
THD (1KHz @4 Ω)	0.1%	0.1%
S/N Ratio (A weighted @1W)	-85dBA	-85dBA
S/N Ratio (A weighted @ FP)	-101.1dBA	-101.1dBA
Input Sensitivity		
Hi/Low Input Level	0.15V - 6.0V	0.15V - 6.0V
Input Impedance		
Low Input Level	20 K Ω	20 K Ω
Output Stage		
Output Impedance	0.011 Ω	0.0297 Ω
Damping Factor	>70	>70
Bandwidth (-3dB)	10Hz-50KHz	10Hz-45KHz
Crossover (-12dB/Oct)		
Variable High-Pass	15Hz - 250Hz	N/A
Variable Low-Pass	N/A	35Hz - 500Hz
Variable Sub-Sonic	N/A	N/A
Fuse Ratings		
ATC Mini Fuse (Inside Amplifier)	1 X 20A	2 x 30A
Dimensions (Length x Width x Height)		
Length (inches)	7.64" x 3.7" 1.47"	7.64" x 3.7" 1.47"
Length (mm)	194 x 95 x 37.3mm	194 x 95 x 37.3mm

Warranty

Thank you for purchasing a Cerwin Vega Mobile product and we hope to provide you with countless hours of listening enjoyment.

Please take a brief moment to register your new product. By registering your new product, you will receive benefits such as:

- Important product notifications that may pertain to your purchase.
- Confirmation and record of ownership in case of loss or theft.
- Knowledgeable customer service and technical assistance pertaining to your product.

Register your new product by completely filling out this Product and Warranty Registration card or register online at www.cerwinvegamobile.com.

Registration is voluntary and failure to register will not diminish your limited warranty rights.

Limited Warranty (U.S.A.)

Cerwin Vega Mobile warrants all of our amplifiers and speakers to be free of defects in materials and workmanship for a period of one (1) year.

This warranty is non-transferable and applies only to the original purchaser from an authorized Cerwin Vega Mobile dealer. If service is required and necessary under this warranty due to manufacturing defect or malfunction, then Cerwin Vega Mobile will repair and/or replace defective product with either new or remanufactured like product at no charge at our discretion.

Damage to product caused by the following will not be covered under this warranty: abuse, accident, misuse, neglect, modifications, repairing attempts, seller/installer misrepresentation.

This warranty does not cover any incidental, consequential, or cosmetic damage due to accidents or normal wear and tear, nor does it cover the cost of removing or reinstallation of the product.

Warranty is void if the product's serial number has been removed, defaced, and/or tampered with.

Warranty Procedure:

We recommend that you contact your Cerwin Vega Mobile authorized dealer where your original purchase was made to initiate all warranty claims. Our authorized dealers can guide you through the warranty procedure to ensure that your claim will be processed in a timely manner. All warranty returns must be accompanied with a proof of purchase (a copy of the original sales receipt) and be shipped freight prepaid to our facility with an RA (Return Authorization) number clearly marked on the outside of the package. Direct returns from consumers or non-authorized dealers will be refused if shipped without a valid RA number authorized by Cerwin Vega Mobile beforehand.

INTERNATIONAL

Products purchased outside of the U.S.A. are covered only by that country's distributor and not by Cerwin Vega Mobile U.S.A.

Please Ship All Warranty Claims With Pre-Authorized RA Number To:
CV&DA Holdings, Inc.
ATTN: Customer Service Department
3761 S. Hill St.
Los Angeles, CA 90007 USA

Please Contact Customer Service for Further Warranty Information:
U.S.A.
Tel: 213-261-4161 / Fax: 213-947-4767



**3761 South Hill Street
Los Angeles 90007, USA
P 213-261-4161 / F 213-947-4767**

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