



HIGH PERFORMANCE CAR AUDIO



HCCA-BP30

BASS PROCESSOR

HIGH PERFORMANCE

proud to be **LOUD!**



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Thank you for purchasing this Orion product. Orion products are specifically engineered and designed for the mobile audio environment. This manual contains important information about installation, set-up procedures and integrating your new Orion product into your vehicle. With proper care and installation, your new product will provide you with many years of high performance listening enjoyment. We recommend having an Authorized Orion Dealer install your new product for optimal performance and to take advantage of our warranty program. Before installing your new product, please read through the manual to fully understand the application.

Before making any electrical connections, make sure that you disconnect the battery's ground cable to prevent the possibility of short circuits or damage to your electronic equipment. If your vehicle's stereo (head unit) comes with an Anti-theft code, DO NOT disconnect the battery. If you have the access code for the stereo (head unit), please refer to the vehicle's owner's manual.

ATTENTION

FOR ANY QUESTIONS, ISSUES, RETURNS OR WARRANTY

DO NOT contact the retailer, we recommend that you contact our service department for any and all assistance at support@orioncaraudio.com. We will do our best to resolve any problem in a professional and timely manner.



WARNING: This product can expose you to chemicals including DEHP which is known to the State of California to cause cancer, birth defects or other reproduction harm. For more information go to www.P65warnings.ca.gov.

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WHAT'S IN THE BOX

HCCA-BP30 Bass Processor

1 x Bass Knob

1 x Window Sticker

1 x Owners Manual

KEY FEATURES

BASS RECONSTRUCTION TECHNOLOGY

Restores missing low-frequency harmonics for deeper, fuller bass.

SWEEP & WIDTH CONTROLS

Fully adjustable processing bandwidth for precise tuning.

MAX/BASS/CONTROL INDICATOR LEDS

Provide visual feedback for optimal bass enhancement.

HIGH-VOLTAGE OUTPUTS (UP TO 10.5V)

Strong, clean signal delivery to your amplifiers.

BALANCED & UNBALANCED INPUT GROUND OPTIONS

Helps eliminate noise caused by ground loops or OEM radio wiring

GROUND ISOLATION SELECTOR

Prevents hum, alternator noise, and interference.

SUBSONIC FILTER PROTECTION

Removes unusable low frequencies that can damage subwoofers.

REMOTE BASS LEVEL CONTROL INCLUDED

Real-time bass adjustment from the driver's seat.

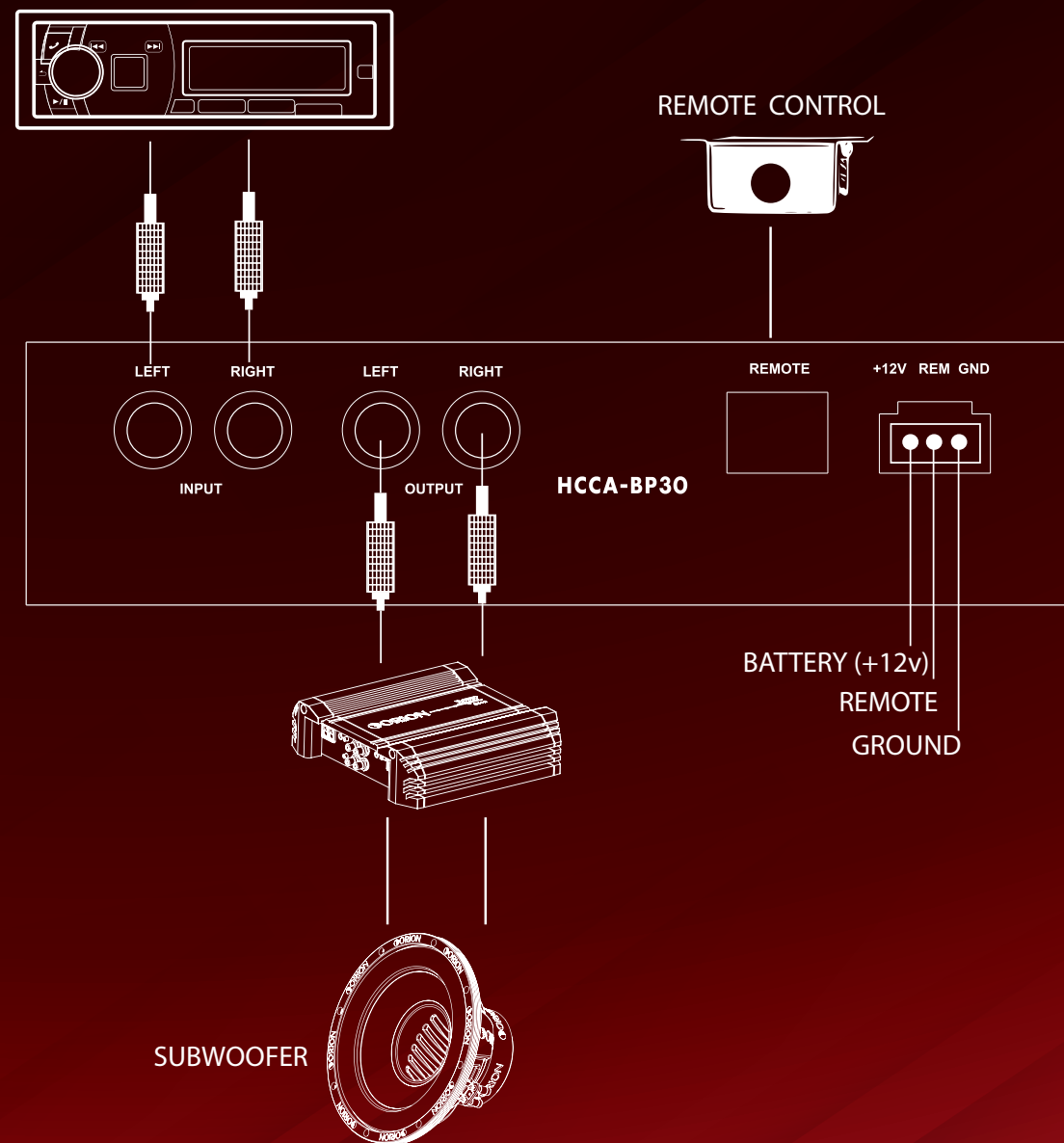
COMPACT, DURABLE CHASSIS

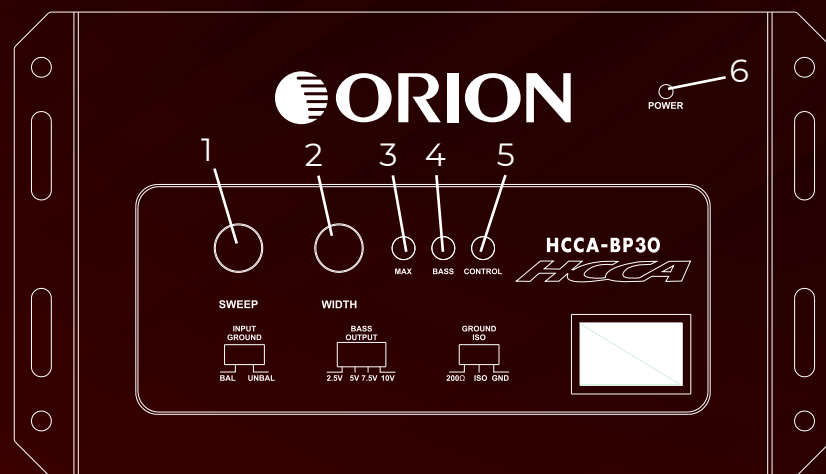
Easy to mount in tight locations within the vehicle.

SPECIFICATIONS	
	HCCA-BP30
Power Supply	6.5 - 18V
Maximum Input Level	10V
Maximum Output Level	10.5V
Input Sensitivity	10.5V
Load Input Impedance	>50K Ω
Output Impedance	100 Ω
EQ Boost/Cut	15dB
Signal to Noise	>110dB
THD @2V Out	<0.02%
Channel Separation	>80dB
CMMR	-63dB Balanced -29dB Unbalanced
Frequency Response	10Hz -30kHz
Subsonic Filter	31Hz - 71Hz
Current Draw	210mA
Interchannel Gain Tracking	0.1dB
Fuse	1A
Dimensions	7.28 x 4.13 x 1.54"

WARNING

Continuous exposure to sound pressure levels over 100dB may cause permanent hearing loss. High powered sound systems may produce sound pressure levels well over 135dB.
Need we say more! Use common sense.





FRONT PANEL OVERVIEW

1. SWEEP KNOB (Frequency Center Control)

- Adjust the center frequency of the bass enhancement.
- Rotates from LOW -> HIGH Frequency
- Use LOW for deep, rolling bass; use HIGH for punchy, tight bass

2. WIDTH KNOB (Bandwidth Control)

- Adjust how wide or narrow the bass restoration range is
- WIDE = Restores a large range of frequencies for fuller bass
- NARROW = Focused boost for tight, accurate bass

3. MAX Indicator LED

- Illuminates when the unit is generating the maximum safe bass enhancement level.
- If constantly ON, reduce Sweep/Width settings or gain to avoid clipping.

4. BASS Indicator LED

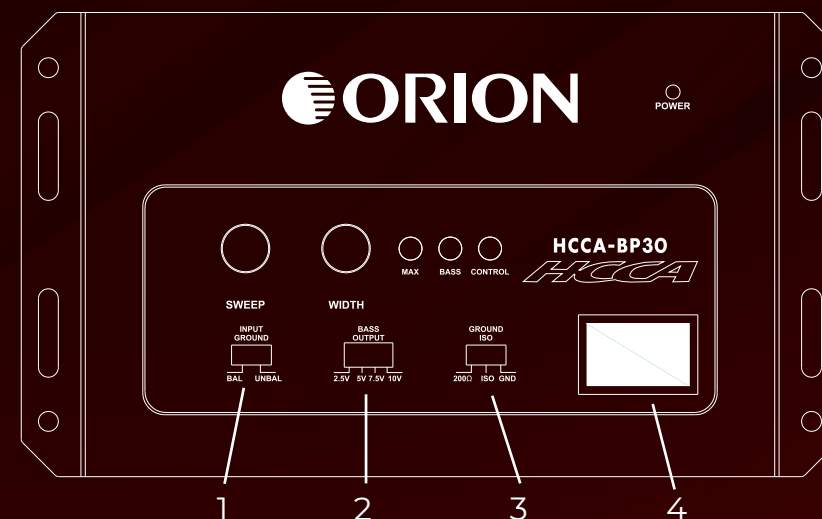
- Shows when bass processing is active.
- Blinks with dynamic bass activity.

5. CONTROL Indicator LED

- Confirms signal changes coming from the Remote Bass Knob.
- When you turn the remote knob, this LED should respond.

6. POWER LED

- Located on the top-right.
- Shows whether the unit is receiving power & a valid remote signal.



1. INPUT GROUND (BAL / UNBAL)

- BAL (Balanced): Use when you have noise or engine whine. Helps cancel noise from long RCA runs or OEM integration.
- UNBAL (Unbalanced): Standard setting for most aftermarket radios.

2. BASS OUTPUT VOLTAGE SELECTOR (2.5V / 5V / 7.5V / 10V)

This determines the signal strength sent to your amplifier.

- 2.5V – Safe for sensitive amps
- 5V – Standard aftermarket amplifier
- 7.5V – High-performance amps
- 10V – Maximum clean signal, for competition amps or long RCA runs

(Use the lowest level needed to avoid amplifier clipping.)

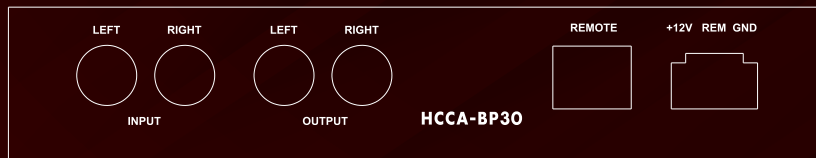
3. GROUND ISO (200Ω / ISO / GND)

Helps eliminate noise based on your installation:

- 200Ω: Default — prevents most noise.
- ISO: Fully isolated ground — best for alternator whine.
- GND: Direct ground connection — strongest signal, but may introduce noise.

4. VOLTAGE METER DISPLAY

- Displays the unit's operating voltage to help monitor system power status.



RCA INPUT (Left / Right)

- Connects to your radio or signal processor.
- Accepts low-level RCA signal.

RCA OUTPUT (Left / Right)

- Sends the restored bass signal to your subwoofer amplifier.
- Output level is determined by the voltage selector.

REMOTE PORT

- Remote plug for the included Remote Bass Knob.
- Allows real-time adjustment from the driver's seat.

POWER TERMINAL

- +12V: Constant battery power (must be fused at 1A).
- REM: Remote turn-on lead from radio.
- GND: Clean chassis ground.

Aftermarket Radio → HCCA-BP30 → Amplifier

RCA OUT (radio) → HCCA-BP30 INPUT
HCCA-BP30 OUTPUT → Amplifier INPUT
+12V / REM / GND → vehicle wiring
Remote knob → HCCA-BP30 REMOTE port

Factory Radio → Line Adapter → HCCA-BP30 → Amplifier

Speaker wires → Line Output Converter
LOC RCA OUT → HCCA-BP30 INPUT
HCCA-BP30 OUTPUT → Amplifier INPUT
Power wiring as above

Multiple Amplifiers

HCCA-BP30 OUTPUT → Y-Splitter → Amplifier 1 & Amplifier 2

In the event that your Orion HCCA-BP30 Bass Processor appears to require service, we recommend performing basic troubleshooting to confirm whether the issue is with the processor itself or another part of your audio system such as the amplifier, radio, wiring, or power connections.

If your HCCA-BP30 was installed by an Authorized Orion Dealer, return to the dealer and allow a qualified technician to diagnose the issue.

If you installed the unit yourself, use the following guidelines to help identify the source of the problem:

No Output / No Bass

- Check that the radio and amplifier have power.
- Confirm the HCCA-BP30 POWER LED is on.
- Verify all RCA inputs/outputs are fully connected.
- Make sure the Remote Bass Knob is not turned all the way down.
- Check ground and remote wiring.

Distorted Bass at All Volumes

- Check RCA connections for looseness or damage.
- Verify correct polarity at the amplifier/subwoofer.
- Make sure Sweep and Width are not set too high.

Distorted Bass at High Volume Only

- Lower amplifier gain.
- Reduce Sweep/Width settings.
- Check for loose subwoofer mounting or enclosure leaks.

Weak Bass Response

- Confirm correct output voltage setting (2.5V / 5V / 7.5V / 10V).
- Check polarity at the subwoofer.
- Adjust Sweep and Width.
- Check bass settings at the radio or amplifier.

Noise or Whine

- Try switching INPUT GROUND (BAL / UNBAL).
- Try different GROUND ISO settings (200Ω / ISO / GND).
- Check for poor grounding or RCA cables touching power wires.
-

Remote Bass Knob Not Working

- Ensure the remote cable is fully plugged into the REMOTE port.
- Inspect the cable for damage.

Investigate the layout of your vehicle thoroughly before drilling or cutting. Take care when you work near the gas tank, gas lines, hydraulic lines, electrical components and electrical wiring. Do not use the equipment unmounted. Attach this system securely to prevent damage, particularly in the event of an accident or aggressive driving. Do not mount the system so that wire connections are unprotected or are subjected to pinching or damage from nearby objects. Before connecting or disconnecting power connections at the system power terminals, disconnect the +12V DC wire at the battery end. Confirm that your source unit and other equipment are turned off while connecting the input terminals. If you need to replace the power fuse, replace it only with a fuse identical to the provided fuse. Using a fuse of different type or rating may result in damage to the system, which is not covered by the manufacturer's warranty. Do not install any product where it may be subjected to excessive heat, moisture and dust or where it may be repeatedly kicked, brushed or bumped. Make absolutely sure that the terminals for the products are connected to the proper inputs and outputs from the music source. Never run the wiring on the outside of the vehicle or under it where it can be damaged by road hazards or any moving parts of the vehicle. Use existing wire channels, sills, panels and molding strips inside the vehicle to hide the wiring for safety and a neat appearance.

DISCLAIMER

IMPORTANT: Never cut any metal that is an integral part of the vehicle's safety or structural support system. If you are unsure, it is best to have the product professionally installed by an Authorized ORION Dealer. Never sacrifice your safety for sound.

Orion warrants this product against all defects in material and workmanship for a period of one (1) year from the date of original purchase provided it was purchased from an Authorized Orion Dealer.

The conditions of this warranty and the extent of the responsibility of Orion, under this warranty are as follows:

1. DATED PROOF OF PURCHASE IS REQUIRED FOR WARRANTY SERVICE OF THIS PRODUCT. Information about Orion authorized warranty service may also be obtained at www.orioncaraudio.com or by emailing Orion at support@orioncaraudio.com.
2. This warranty will become void if service is performed by any one other than an approved Orion Warranty Service Center.
3. This warranty does not apply to any product which has been subjected to misuse, neglect or accident, or which has had the warranty seal broken, serial number altered, defaced or removed, or which has been connected, installed adjusted or repaired other than in accordance with the instructions furnished by Orion.
4. This warranty does not cover car static, electrical interference, adjustments or labor costs for the removal or reinstallation of the unit for repair.
5. The sole responsibility of Orion under this warranty shall be limited to the repair or replacement thereof, at the sole discretion of Orion.
6. If it becomes necessary to send the product or any defective part to Orion or an authorized service station, the product must be shipped in its original or equivalent carton, fully insured, with shipping charges prepaid. Orion will not assume any responsibility for any loss or damage incurred in shipping.
7. This warranty is not transferable and protects the original purchaser provided they reside and made their purchase in the United States. International consumers may contact their local retailer or distributor for warranty information.
8. ALL IMPLIED WARRANTIES, EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, SHALL HAVE NO GREATER DURATION THAN THE WARRANTY PERIOD SET FORTH ABOVE. UNDER NO CIRCUMSTANCES SHALL ORION BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT. BECAUSE SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS OR EXCLUSIONS OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.
9. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.
10. Should you have any difficulties with the performance of this product during warranty or with any Orion authorized service center, you may contact Orion by emailing us at support@orioncaraudio.com.



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