

ALCHIMIST

GERMAN ENGINEERED CAR AUDIO | SINCE 1943



12 CHANNEL CLASS AB CAR AMPLIFIER

AD12H - 1500

Lossless Sound Car Series | Compact Design & Solid Output



DSP Installation & Tuning Guide

Complete Setup Guide for All Alchemist DSP Processors

alchemists.com | Reinhard Group | Waiblingen, Germany

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PRE-INSTALLATION

1. Pre-Installation Checklist

Tools Required

Wire strippers, crimping tool, multimeter, screwdrivers, zip ties, electrical tape, soldering iron (optional).

Package Check

DSP unit, wiring harness, power cable, ground cable, remote wire, RCA cables, USB cable, mounting brackets, manual.

Vehicle Prep

Disconnect negative battery terminal. Identify speaker wires. Plan cable routing. Ensure mounting location has ventilation.

Software

Download correct software from alchemists.com/documents. Install on PC or Android before hardware installation.

HARDWARE

2. Hardware Installation

Mounting

Choose flat, vibration-free surface (under seat or trunk). Use provided brackets. Ensure adequate airflow.

Power Wiring

Route B+ from battery through firewall with inline fuse. Ground to clean chassis metal. Remote wire to ACC or head unit.

Signal Input

Factory head unit: High-Level input. Aftermarket: RCA. Digital: Optical S/PDIF or USB for best quality.

Speaker Output

Connect each channel to corresponding speaker. Label wires. Maintain polarity. Use proper gauge wire.

SOFTWARE

3. Software Setup

PC Connection

Connect via USB. Launch Alchemist DSP software. Auto-detect should find the unit.

Bluetooth

Hold BT button 3 seconds for discovery mode. Pair from phone. Default code: 0000.

Channel Setup

Assign outputs: Front L/R, Rear L/R, Center, Subwoofer. Link stereo pairs.

Input Source

Select active source. Set sensitivity to match output level. Avoid clipping.

EQ & CROSSOVER

4. EQ & Crossover Settings

31-Band EQ

Each channel has 31-band EQ (20Hz-20kHz). Start flat, make small cuts first, then gentle boosts (max +3dB).

HPF

Tweeters: 3-6kHz (24dB/oct). Midrange: 250-500Hz (12dB/oct). Midbass: 60-100Hz (12dB/oct).

LPF

Subwoofers: 60-120Hz (24dB/oct). Ensures only bass reaches the sub.

BPF

Midrange drivers: combine HPF+LPF. Typical: 250Hz-4kHz.

TIME DELAY

5. Time Delay & Alignment

Concept

Compensate for different speaker distances. Closer speakers get more delay so all sound arrives simultaneously.

Measure

From driver head to each speaker. Delay = (Max distance - Speaker distance) / 34.3 ms.

Fine Tune

Play mono vocal track. Adjust until singer appears centered on dashboard in front of you.

TROUBLESHOOTING

6. Troubleshooting

No Power

Check fuse, battery connection, ground, remote wire. Verify voltage with multimeter.

No Sound

Check input source, speaker wiring, channel levels. Test with different input.

Noise/Hum

Check ground loop. Reroute signals away from power. Verify RCA quality.

BT Issues

Reset (hold 10s). Delete pairings. Re-pair. Update firmware.

Software

Reinstall USB drivers. Try different cable/port. Restart both devices.