



**MODEL 1502IQ®**  
**(1995-MSRP \$429.00)**

**OWNER'S MANUAL AND  
INSTALLATION GUIDE**

**INTRODUCTION**

Congratulations on your decision to purchase a **LINEAR POWER™** audio product. Our commitment to grow with the times and meet the demands of the ever-changing auto-sound market has brought a new change to our existing line.

**LINEAR POWER™** is proud to introduce the "IQ" series.

This series of amplifiers offers two new circuitries, which are a must to today's auto-sound listener.

First is the incorporation of the "**Inverted Channel**"("I") allowing the amplifier to be used in a one, two or three channel mode simply by choosing one of the many external-wiring methods.

Second is the "**Quieting Circuit**"("Q"). With this circuit, there is no need to spend additional time or money on expensive outboard "dethumping" modules. Each amp is internally equipped with an improved circuit to assure total silence each time the amplifier is turned on and off.

**TECHNICAL DESCRIPTION**

**POWER SUPPLY 1502IQ®:**

Self oscillating for reliability and efficiency. The transformer is epoxy dipped for extreme vibration resistance.

**OUTPUT STAGES 1502IQ®:**

Transformerless, direct coupled and fully complementary. Output transistors are high current and low distortion **TO-218 Darlington Devices**, operating at a

fraction of their limitations. Total power dissipation potential of the output transistors is 500 watts.

#### **PROTECTION:**

Our stable amplifier design is made virtually indestructible by three separate forms of protection. First is an all-new Thermal Protection Circuit, which is designed to prevent damage from high frequency oscillations or excessive ambient temperature. The second form of protection protects the amplifier from short circuits in the installation. The third form of protection guards against component damage from reversed power connections.

#### **CONSTRUCTION FEATURES:**

The infinitely variable input sensitivity controls permits optimal signal matching for lowest noise and lowest distortion with virtually any source. All components used are rated for at least 150% of their intended use, and are mounted on double-sided fiberglass epoxy circuit boards.

#### **QUALITY CONTROL:**

In-house construction of critical components like transformers and chassis pieces, as well as total assembly, allows **LINEAR POWER™** to maintain uniform quality. 100% of the finished units are tested, then burned in for four hours, and tested again. Amplifiers, which pass these rigorous controls, have truly earned the **LINEAR POWER™** Logo.

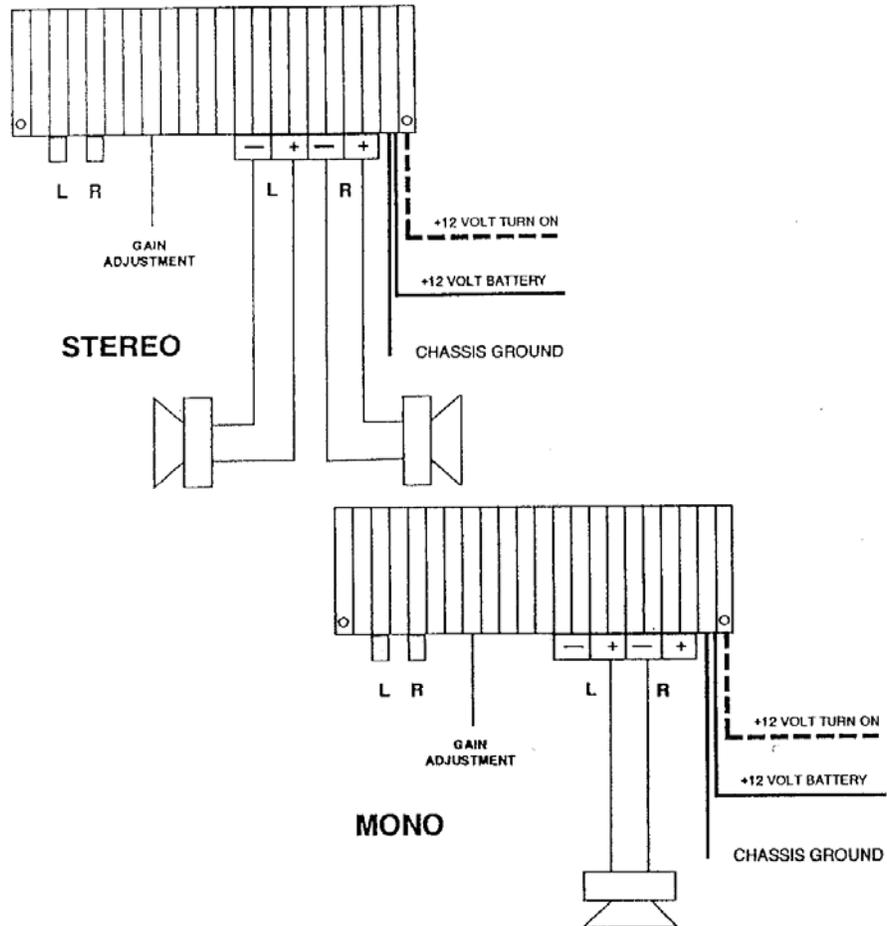
### **INSTRUCTIONS**

Read the following instructions through completely. If they appear too complicated, we recommend that you have an authorized **LINEAR POWER™** Dealer perform the installation.

### **MOUNTING**

- 1.** The amplifier will work best if it is kept as cool as possible. Mount in a position that allows air to flow freely through the fins. Be sure there is ample space above the amplifier to avoid trapping heated air rising from the amplifier. The amplifier should not be mounted upside down. Avoid mounting any amplifier in the dash or on the firewall to avoid noises being radiated directly into the case.
- 2.** Mount your amplifier in a position that allows ample room for gain adjustments, and the installation, removal and attachment of leads.
- 3.** The case of your amplifier is designed to act as a noise shield. To maintain this protection, be sure the metal case of the amp does not touch the metal of the car. Do not remove or damage the rubber grommets, which provide electrical insulation and vibration isolation.

## 1502IQ© WIRING DIAGRAM



## WIRING INSTRUCTIONS

1. Disconnect the negative ground cable from your vehicle's battery before making any power connections to your amplifier.
2. Connect the negative power wire from the amp to a solid frame member via bolt or self-tapping screw. This connection must be a clean, unpainted surface. Always attach the ground wire first when installing the amplifier, and disconnect the ground last when removing the amp from the system.

3. A fuse of proper size must be installed in line with the main power in order to prevent damage to your wiring. It should be connected to the battery's positive terminal, or as close to the battery as possible. Use the fuse holder and fuse provided, and replace only with the same size fuse. The **Model 1502IQ**® uses an **AGC 30-amp fuse**.

### **WARNING: USE OF OVERSIZE FUSE WILL DAMAGE YOUR AMPLIFIER**

4. The other end of the fuse holder should be connected to the positive power wire from the amplifier. To extend the length of the power lead, use 12 gauge wire or larger to reduce power loss.

5. The red and white wire acts as an electrical switch to turn the amplifier on and off. It should be connected to the power antenna lead from the radio. Where no power antenna lead exists, a source of 12 volts, connected through a toggle switch, will do. Do not connect the red and white wire directly to a source that will leave the amplifier permanently on as this will drain the battery.

6. The RCA (Phono) jacks will accommodate either high or low level signals, ranging from 150 mV to 5 Volts. For low-level signals, always use shielded cable and avoid routing signal cables in the vicinity of any power wires. The center pin of the RCA plug is always the positive input connection. With the connector end of the amplifier facing you, top side up, the connections are **LEFT** and **RIGHT**.

### **OPERATION/ADJUSTMENT**

The output of most any car audio equipment will follow a common distortion curve. This curve will show that the distortion is at its lowest level right before the amp reaches full rated output. After that point, the distortion increases rapidly to unusable levels. For any system to operate at minimum distortion with minimum noise and still reach full power output, the equipment should be aligned to operate at the same point on the curve at the same time.

In a basic system, using a single amplifier, set the amp gain to minimum, turn the source unit up until it just starts to distort, then back down slightly. This is the point where the output of the source is cleanest. Now, bring the gain of the amp up until it just starts to distort and back down slightly. This will allow the source and amp to reach maximum usable output at the same time.

### **BRIDGED MONO OPERATION**

The **Model 1502IQ**® is built with the right channel inverted. This allows the amplifier to be used in a bridged mono configuration.

These amplifiers are capable of driving 2-ohm mono loads (\*\***4 ohm speaker impedance**\*\*). To use these amplifiers in that configuration, the internal taps

**must** be changed. Removing the faceplate and changing the spade connectors from the '4' setting to the '2' setting accomplish this.

The wiring for the bridged mono mode is as follows:

With the connector end of the amplifier facing you, top side up, the speaker terminal block is arranged: **LEFT (-); LEFT (+); RIGHT (-); RIGHT (+)**. The mono mode uses the **LEFT (+)** and **RIGHT (-)** connections. An electronic crossover, such as the **XO3**, should be used to limit the frequency range to the input of the amplifier for best results.

## **TWO-OHM CAPABILITY**

Unplug the two jumper wires near the four large filter capacitors from the lugs marked 4 ohm and press them firmly back onto lugs marked 2 ohm. This will allow the amplifier to operate into a 2-ohm load on each channel, or a 4-ohm load when used in bridged mono mode (\*\*see statement above\*\*). The lugs are marked 2 for 2-ohm stereo or 4 ohm bridged, and marked 4 for 4-ohm stereo and 8 ohm bridged.

## **GENERAL TROUBLESHOOTING**

### **NO SOUND**

Check all connections. Check main power fuse. Check accessory fuse of your vehicle. Check to see that +12Vdc is present at the amplifier on the power wire, and on the red/white remote turn-on wire. Check for a solid ground connection. Check that the main music source is putting out signal.

### **BLOWS FUSES**

check all connections to be sure no wires are touching each other or the chassis of the vehicle or any other equipment in your install. Check that your speakers are in proper working order.

### **SHUTS OFF**

As this amplifier is equipped with thermal and short circuit shut-down electronics, in the event of high ambient temperature or improper speaker impedances, the amp will turn itself off. To avoid damage to speakers, turn down the volume while waiting for the amp to turn itself back on. If this occurs repeatedly, use a fan to cool the amplifier and check for proper speaker loads and connections.

## **SERVICE OR REPAIR**

To obtain modification, service or repair, please contact our **ONLY Authorized LINEAR POWER™ Product Service Center:**

### **T.I.P.S. INC.**

3455 Lanell lane, Pearl, MS 39208

(601) 932-8477

E-mail: [ray@tipsinc.net](mailto:ray@tipsinc.net)

**LINEAR POWER** <sup>TM</sup>  
3455 LANELL LANE, PEARL, MS 39208 (601) 932-8477

## SPECIFICATIONS

### 1502IQ©

<b>Power output @ 4 ohms RMS @ 12.5 volts</b>	<b>75X2</b>
<b>THD @ full output 20-20KHz</b>	<b>.05%</b>
<b>Slew Rate volts/microsecond</b>	<b>8Vms</b>
<b>Damping factor @ 4 ohms</b>	<b>&gt;100</b>
<b>Channel separation</b>	<b>&gt;70dB</b>
<b>Maximum current</b>	
4 ohms	<b>18A</b>
2 ohms	<b>23A</b>
Idle	<b>.7A</b>
<b>Fuse rating</b>	<b>25A</b>
<b>Dimensions</b>	<b>2x7.7x9.6</b>

**LINEAR POWER** <sup>TM</sup>

3455 LANELL LANE, PEARL, MS 39208 (601) 932-8477