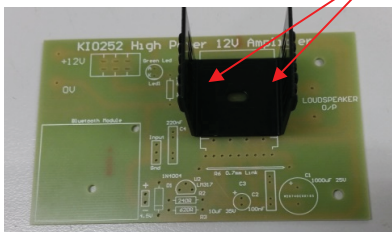


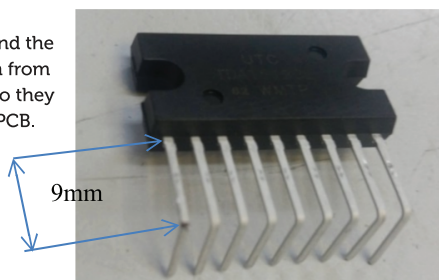
### Construction of the Basic Amplifier

#### Prepare Heatsink and TDA1519

The Heatsink needs to be drilled to accept the TDA1519A Audio Amp I.C. Place the heatsink on the PCB and hold in position while marking where the 2 x 3mm holes need to be drilled.



You will need to bend the leads at 90° at 9mm from the package body so they can insert into the PCB.



### Construction of the Basic Amplifier

#### Assemble Circuit Board

Firstly build and then test the High Power Amplifier Section and ensure it is functioning as expected. If you are adding the Bluetooth option now you can fit them and test again. If there's an issue with construction it will make fault finding a lot easier.

Using the component overlay, the component list and the circuit diagram, load and solder the components into the printed circuit board (PCB).

Start with the lower profile components first to enable you to turn board over and solder leads easily.

Start with the wire link, then resistors, led, capacitors and switch, Soldering as you place them.

Finally fit the TDA1519 amplifier and heatsink (after drilling mounting holes in correct place).

Apply a smear of Heatsink compound to the metal area underneath the Amplifier to maximize heat transfer to the heatsink. Place the heatsink in position on top of PCB then the TDA1519 with the leads inserted into the PCB and fix using the 3mm hardware.

You will now be able to solder the leads. When finished, carefully inspect your solder joints and double check that your component placements and polarization are correct.

### Testing

After checking your component placement and soldering, 12VDC can be applied with the switch in OFF position. It is a good idea to have some form of current limit on the power supply voltage supply in case there is a construction / soldering issue that wasn't noticed.

With the switch OFF, the Green Led should be OFF.

Slide the switch ON and the Led should light immediately.

If it doesn't happen turn OFF and inspect PCB further there's something wrong. When the Led is lit carefully measure the Voltage between Pin 7 and Pin 2, it should be approximately 12VDC the same as the supply voltage. 2nd check is between Pin3 and Pin2 which should be approx. 6VDC. If both OK switch off and connect a 4ohm speaker to the output and your audio device output signal to the L,G,R (Left,Ground,Right) input.

Pay careful attention that the input signal level PT1 is turned to low with so as not to overdrive the amplifier then gradually increase the volume to test.

### Bluetooth Kit

To add the Bluetooth Module to Power Amp PC make sure Kit is disconnected from your 12VDC supply. Insert and solder the Bluetooth Module and 4 additional parts. When trimming wires from the inserted components keep the excess wire leads, you will need these to use as wire links to connect the module to the 12VDC power connection and STEREO INPUT L,G,R input on the Amplifier PCB. The Bluetooth Module has + and - Bat connection holes/solder pads, use 2 of the leads and drop through these holes and solder to the Module pads and the matching Power Amp PCB pads.

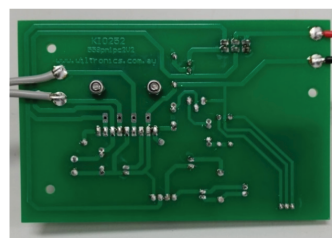
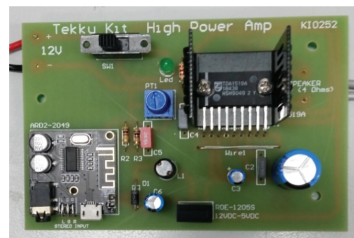
Another 3 wire leads are used for the STEREO INPUT L, G & R connections by soldering to the holes/solder pads in the Power Amp and then folding the links over onto the Bluetooth Module pads and then soldering. L matching with L on the module and same for G & R.

### Bluetooth Testing

Connect a speaker the 12Vdc power to the Amplifier board and switch ON. The Green Led on the Amplifier board should light up, followed shortly after by the Blue LED on the Bluetooth Module.

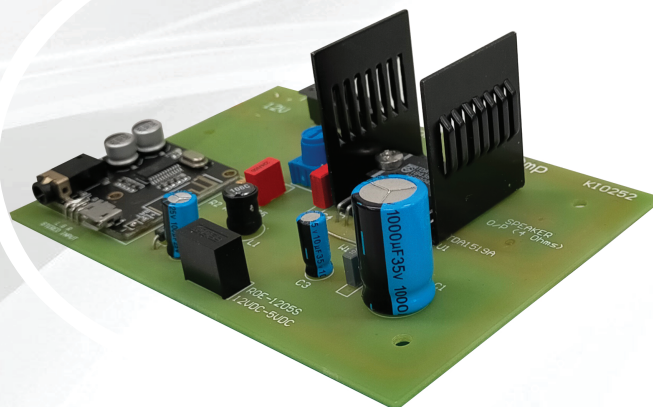
With the Volume potentiometer PT1 turned up slightly you will hear Voice prompts from the Bluetooth Module to connect it to your to your Source.

### Assembled Unit with Bluetooth Parts



# 12V DC High Power Amplifier

## Tekky Kit



# Component List

Designator	Part Description	Part No.
R1	2K2 CR 0.25W Resistor	RS1525
R2	1K CR 0.25W Resistor	RS1485
R3	1K CR 0.25W Resistor	RS1485
Wire1	35mm of 0.71mm Tinned Wire	CB2610
C1	1000uF 25V RB Electro Capacitor	CC1471
C2	0.1uF 100V MKT Capacitor	CC3361A
C3	10uF 35V RB Electro Capacitor	CC1417
C4	220nF 100V MKT Polycap	CC3365
C5	220nF 100V MKT Polycap	CC3365
PT1	10K POT	PT8550
U1	TDA1519 Audio Amplifier IC	X-TDA1519A
LED1	5mm Green Led	X-LED-5MM/G
SW1	Slide Switch DPDT	SW0535
PCB	Printed circuit board	KI0252
HS1	Heatsink	ATH0625

Heatsink Compound	Not Supplied	
Hardware	3mm x 12mm Screw	X2
	3mm Nylock Nut	X2

### Bluetooth OPTION parts (Kit Part NO: KI0254)

Designator	Part Description	Part No.
	Bluetooth Module	ARD2-2049
	Isolated 12VDC to 5VDC Regulator	ROE-1205S
L1	10mH RF Choke	CH0065
D1	1A Schottky Diode	SB160
C6	100uF 25V	CC1445

## Circuit Description

This kit is a Basic High Power Amplifier with an option to add Bluetooth via a module and 4 additional parts supplied as a kit (Part NO: KI0254)

The Amplifier IC TDA1519 is actually two amplifiers in one package.

Effectively one amplifier drives the loudspeaker in a positive voltage direction while the second amplifier drives the loudspeaker in a negative direction.

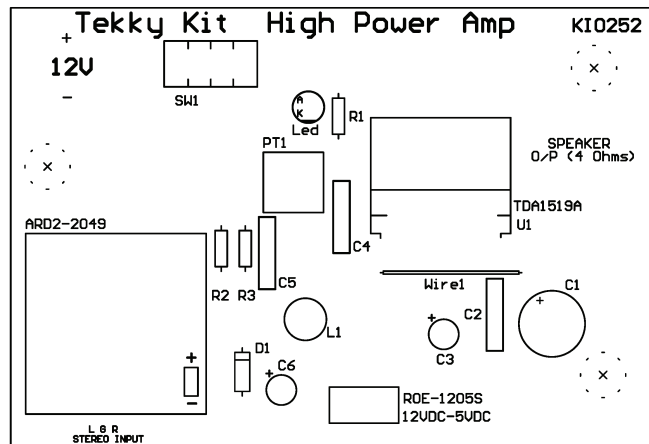
This means that the voltage across the loudspeaker is double that compared to a single amplifier driver and this swing effectively quadruples the power output to the speaker. Typically using two amplifiers that can deliver 4W into a 4Ω speaker expect to obtain about 16W into the same speaker.

In practice it is not quite that much because there are some losses in the second amplifier so expect around 13W. In this circuit the TDA1519A Amplifier is designed to drive a 4 Ω Speaker.

The optional ARD2-2049 Bluetooth Module is powered by 5VDC power via the 12VDC to 5VDC isolated converter and along with the Choke, Filter Capacitor and Schottky Diode eliminates any noise or hum being injected into Power Amplifier.

The Bluetooth Module is wired into the circuit via the Left, Right, Ground, a audio output and by adjusting PT1 to a suitable level as not to overdrive the Amplifier input.

**Fig. 1 - PCB Component Overlay**  
Shown with additional parts for Bluetooth Module



## Full Circuit Diagram including Bluetooth Option

