

G11+ GSDR quick start assembly manual [Part 2]

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Overview

G11 quick start assembly manual Part 2 covers assembly of the TX components.

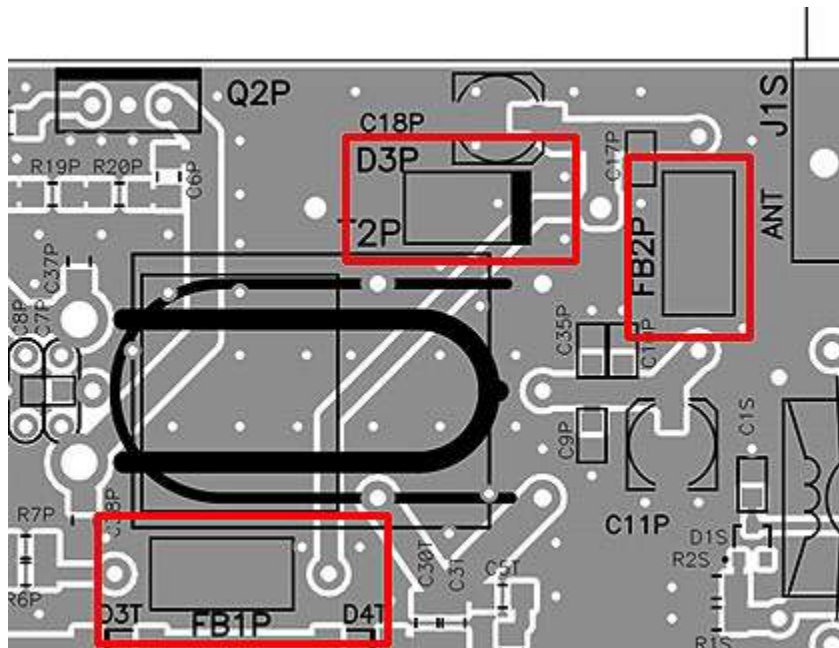
There are two chapters in this manual:

Chapter 1 deals with the installation of components for 1W output version and Chapter 2 is applicable to 10W power output.

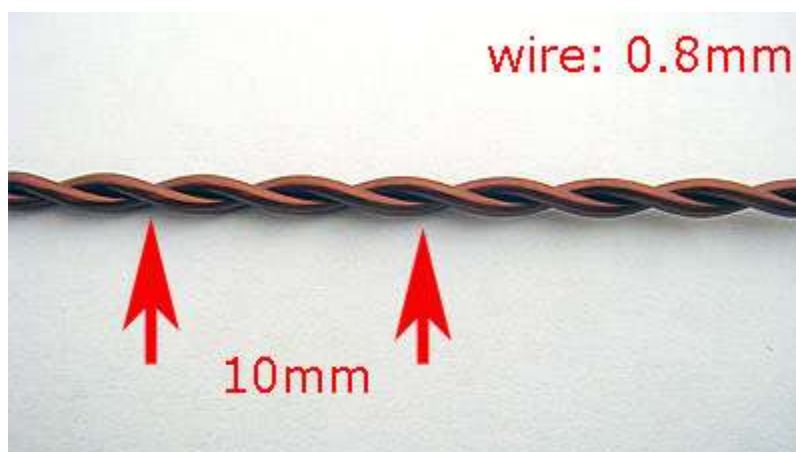
Should your interest be to operate at 1W power level or less, or to use G11 in association with a transverter then proceed to Chapter 1. Otherwise proceed directly to Chapter 2.

Chapter 1.

Install diode D3P, chokes FB2P and FB1P.

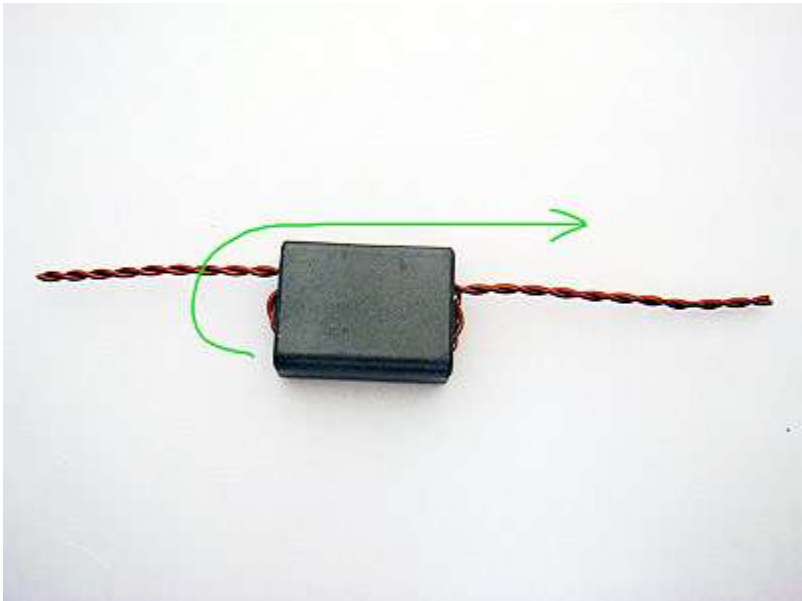
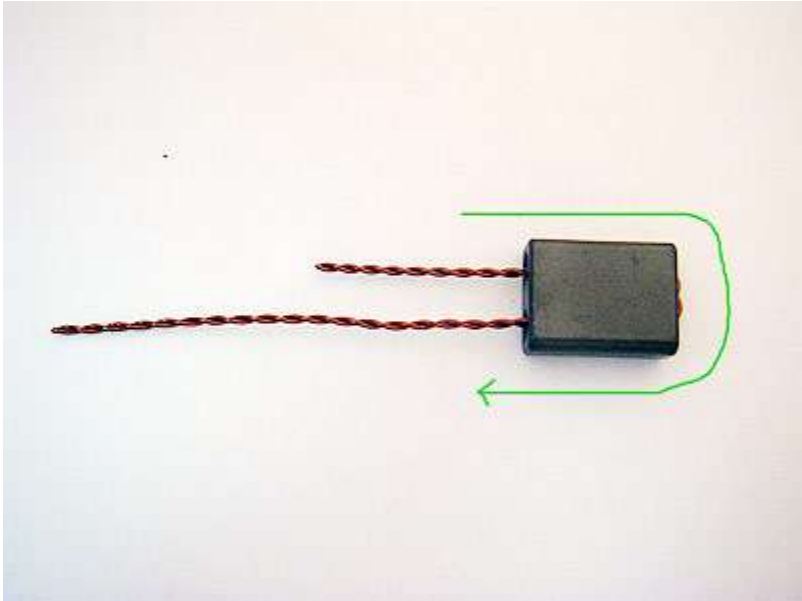
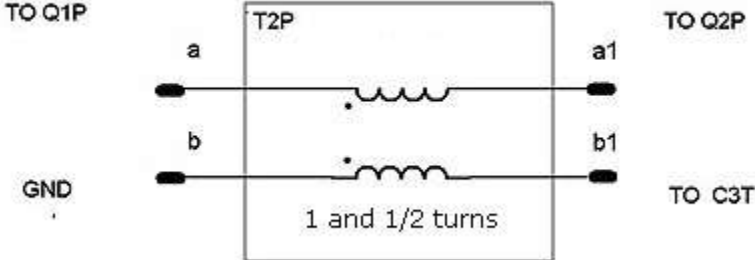


Wind PA transformer T2P. Cut two lengths of 0.8mm wire approximately 20cm long and twist as per photo, 3 turns per 10mm.

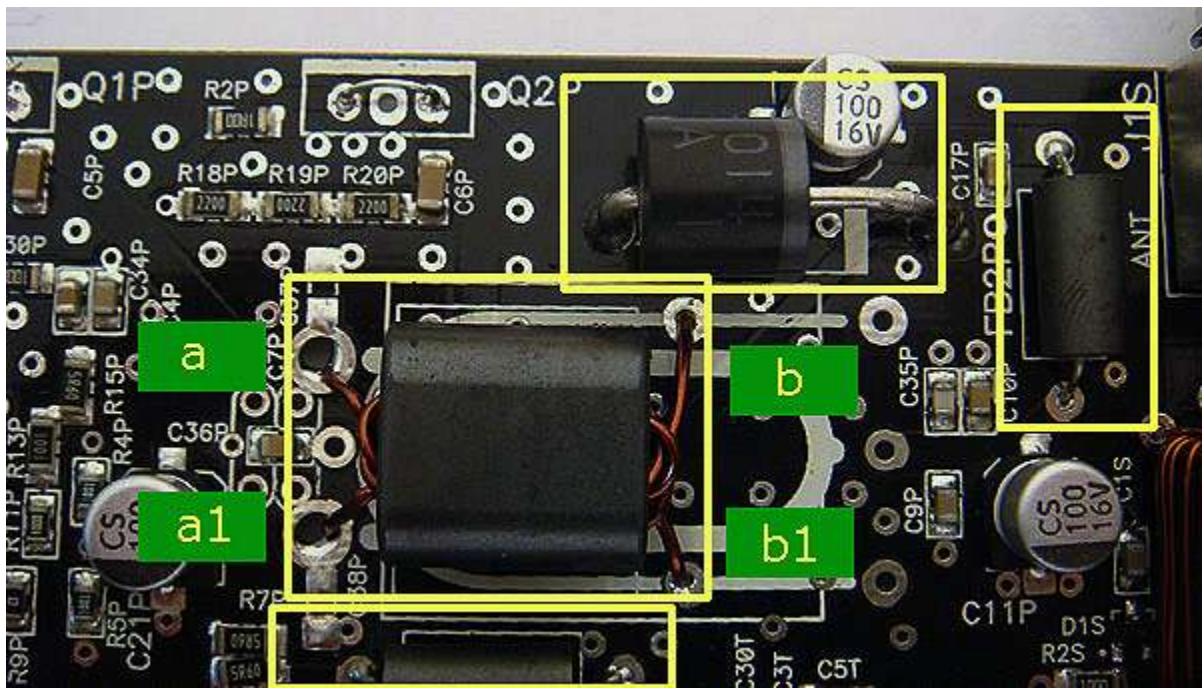


For transformer core, use a binocular core supplied with your kit (either 43-202 or 43-3312)

The winding consists of 1 and 1/2 bifilar turns . Note: This is an electrical diagram of T2P. For practical realisation and PCB mounting see below.

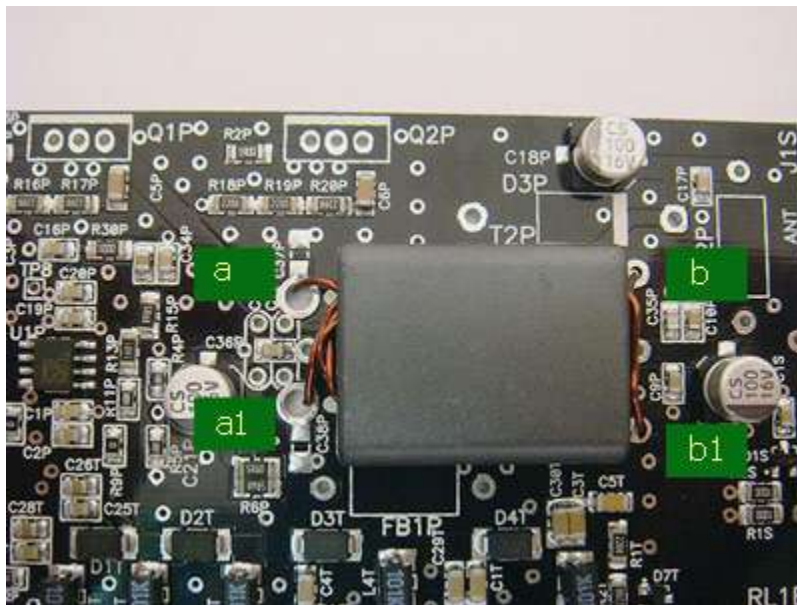


Install PA transformer T2P Note: Before installation, check the a-a1 and b-b1 with an ohm meter and insert wires accordingly.

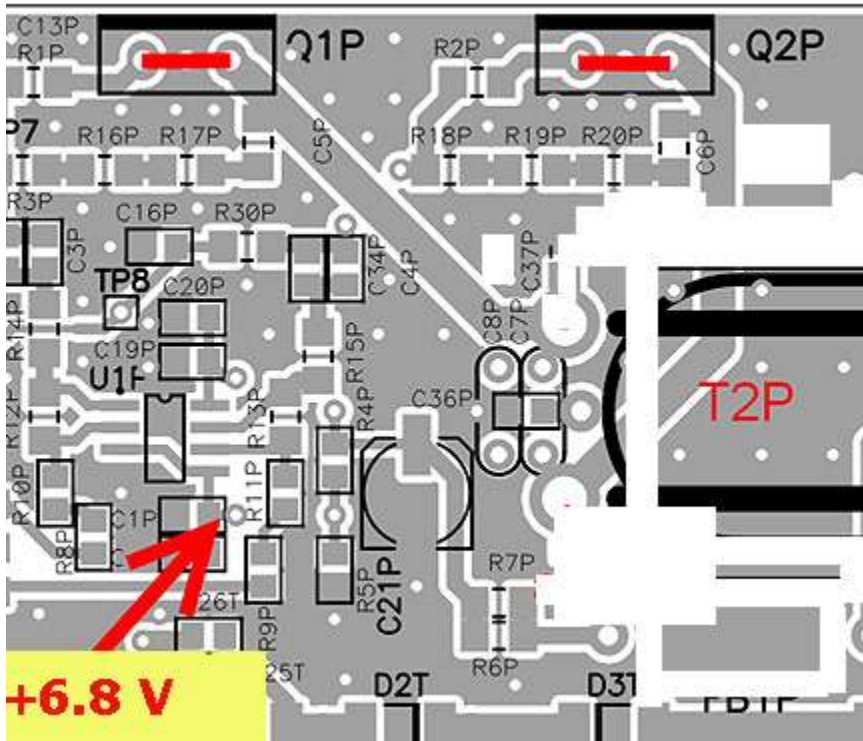


The above image shows T2P wound on a small 43-202 core.

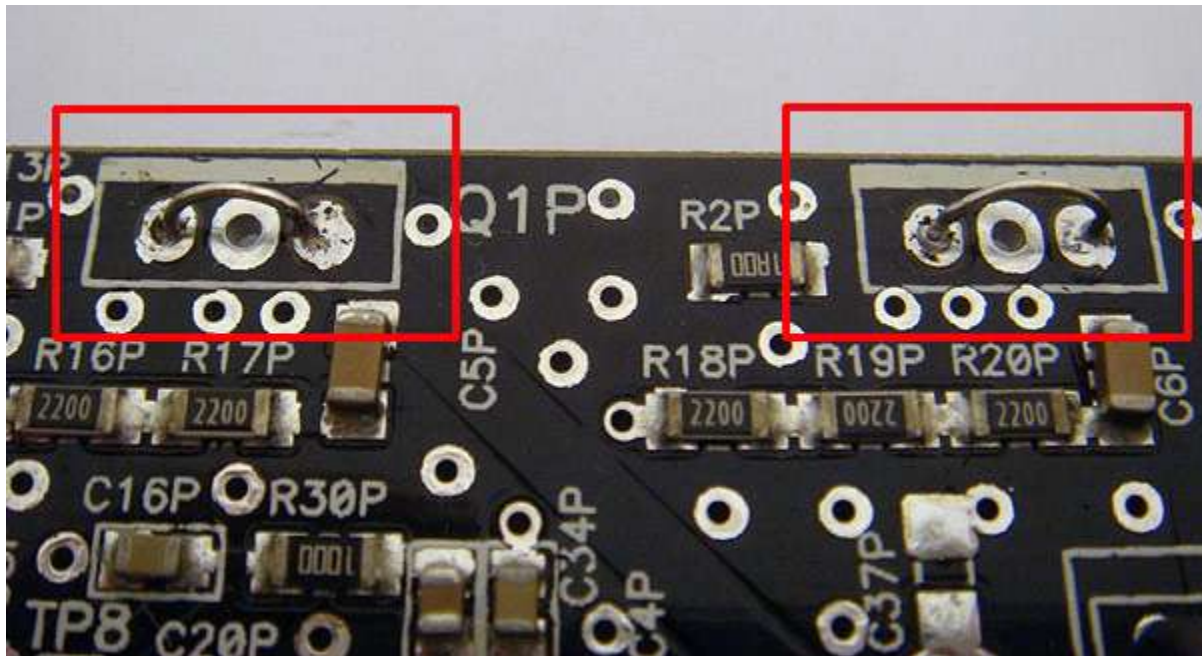
Here is the image of T2P on the larger 43-3312 core:



Install jumpers on Q1P and Q2P.



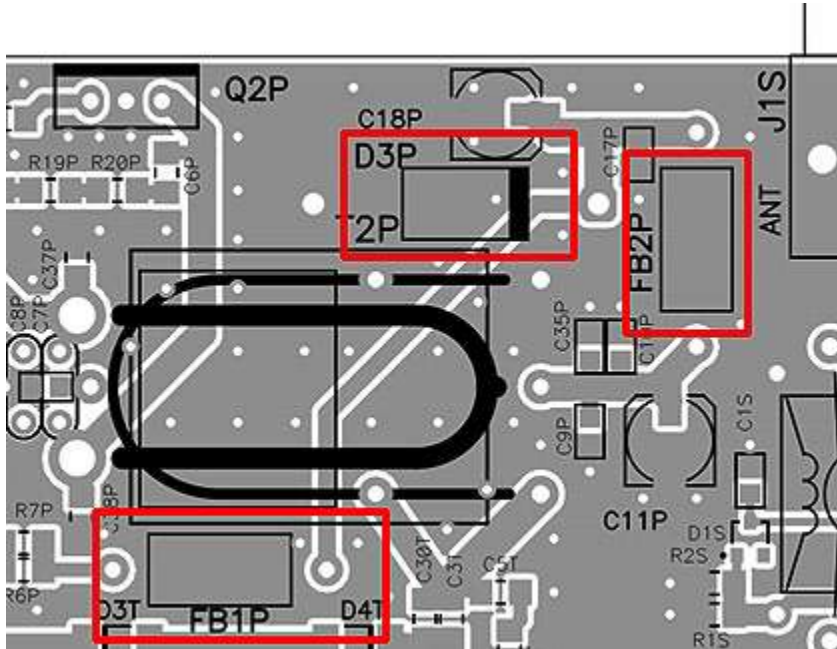
Note: DO NOT shortcut all 3 pads, only wire between pads as shown here:



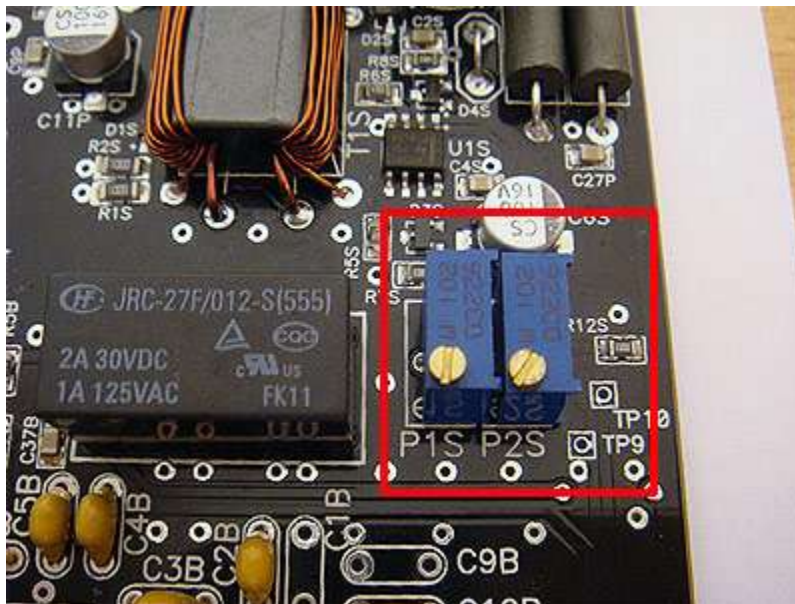
Your G11 is now ready to transmit with 1W output power.

Chapter 2.

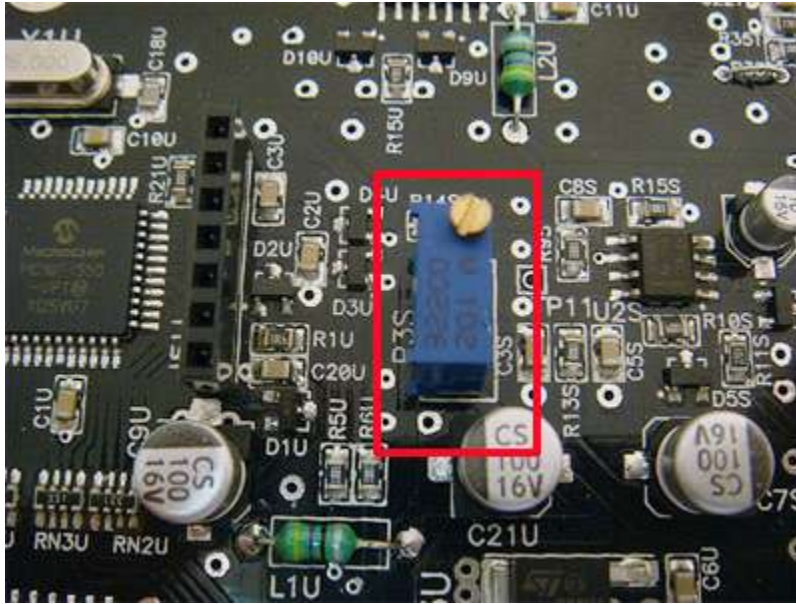
Install diode D3P, chokes FB2P and FB1P.



Install trimmers P1S [1K] and P2S [1K].



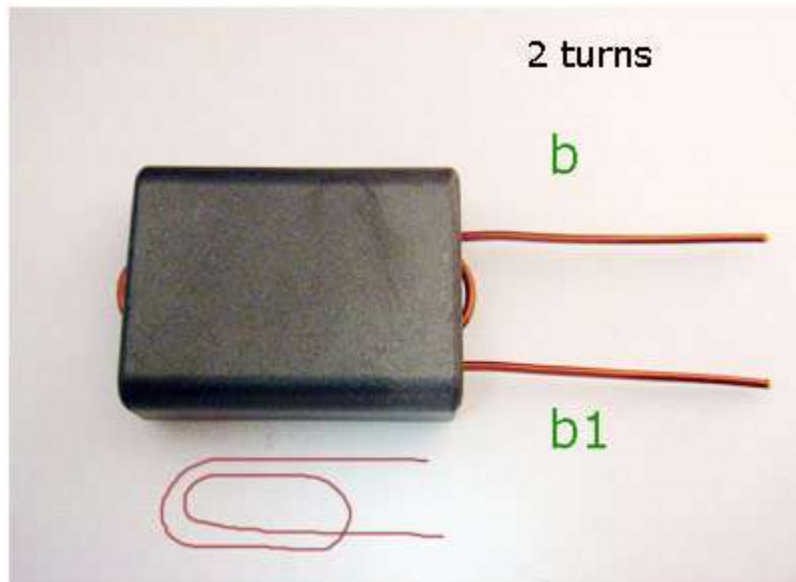
Install trimmer P3S [1K].



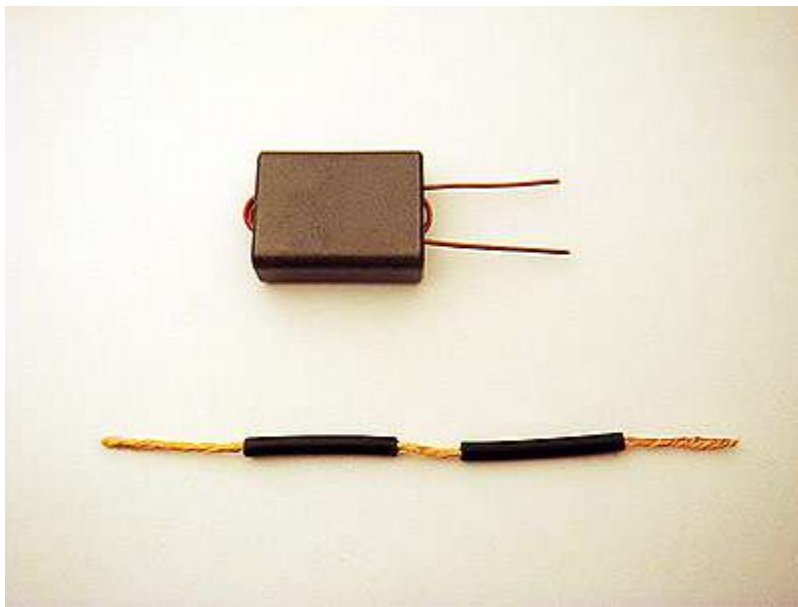
Install trimmer P1P [5K] and P2P [5K].

Wind PA transformer T2P.

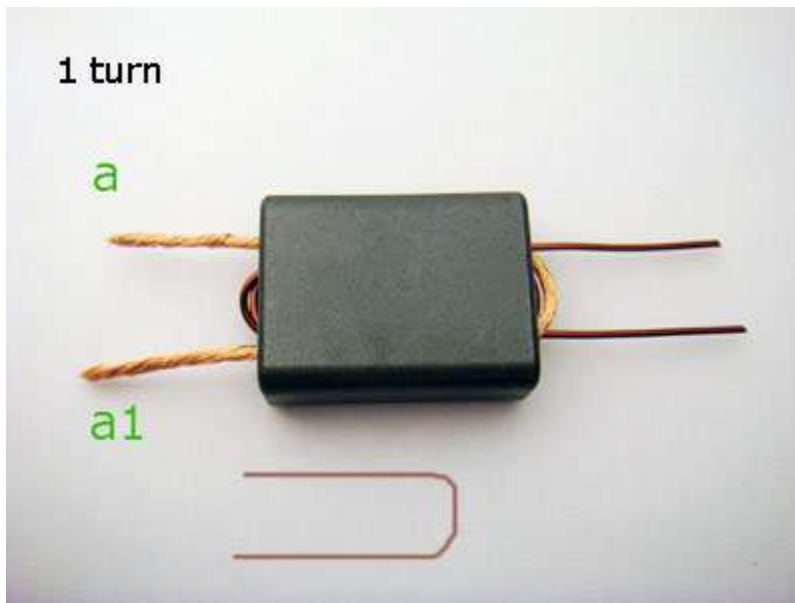
Cut one length of 0.8mm wire approximately 15 cm long and feed through core as shown. The wire passes through each hole twice which counts as 2 turns.



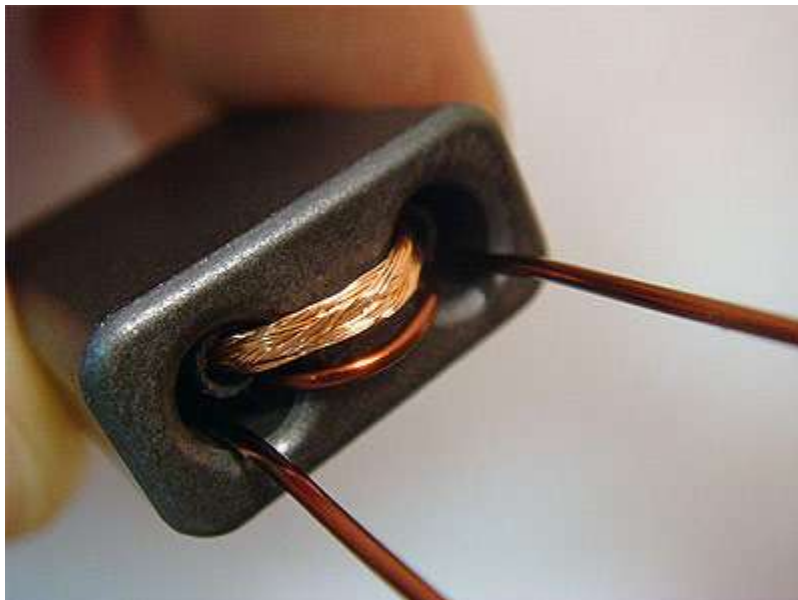
Cut one length of RG-174 coax cable 10 cm long. Pull out the inner conductor and rubber jacket. Now cut two lengths of jacket (30 mm each) and put them back on the braid.



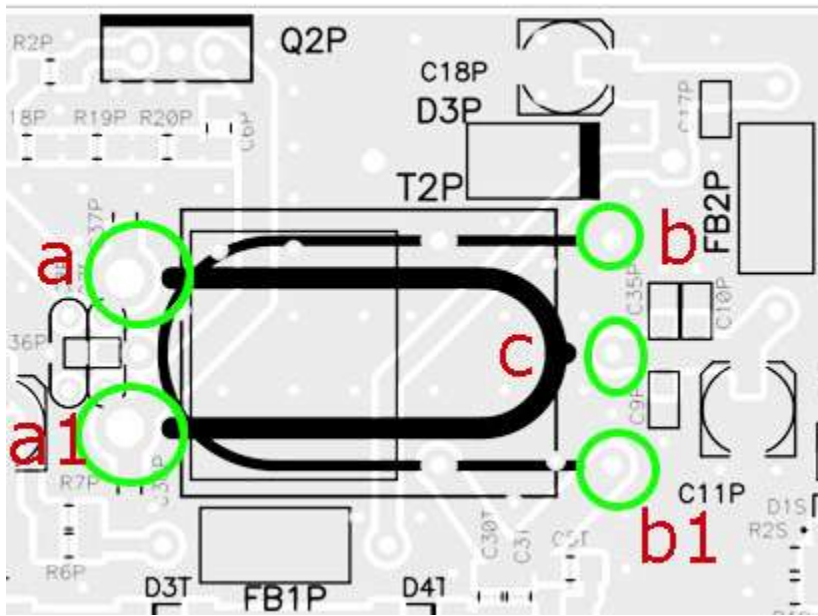
Feed the braid through the core, once through each hole (again, this counts as ONE turn).



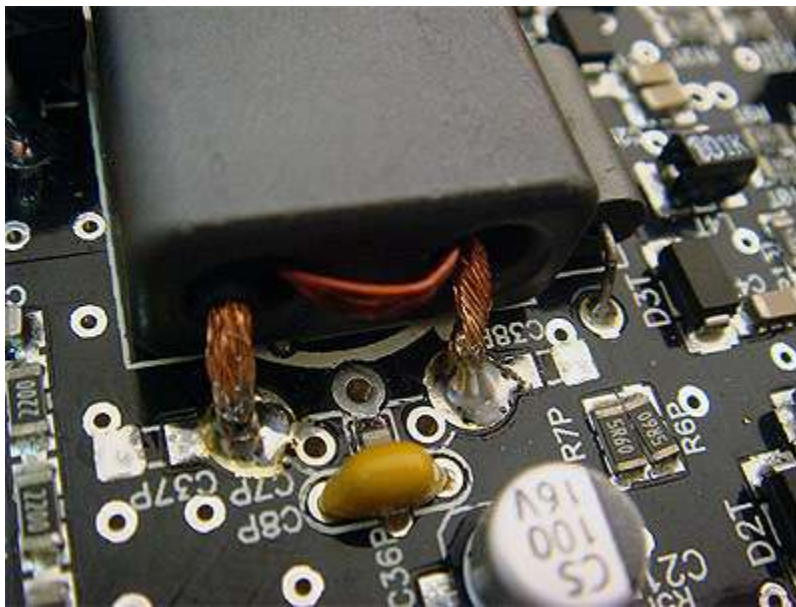
T2P ready for installation:



Install PA transformer T2P as shown below.

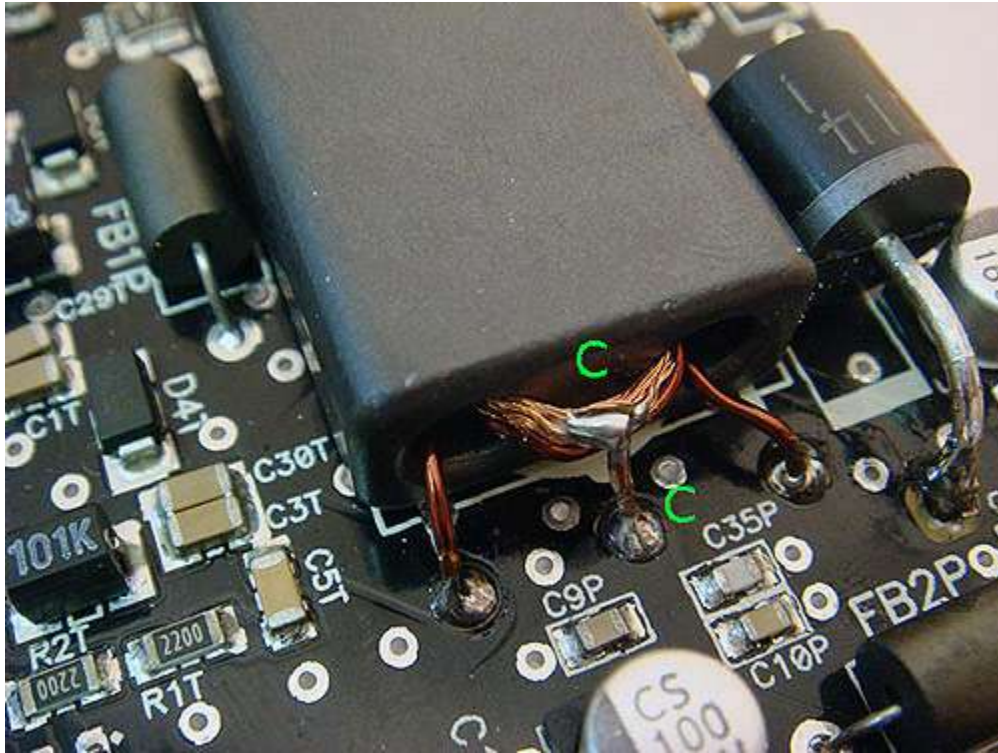


a-a1 side:



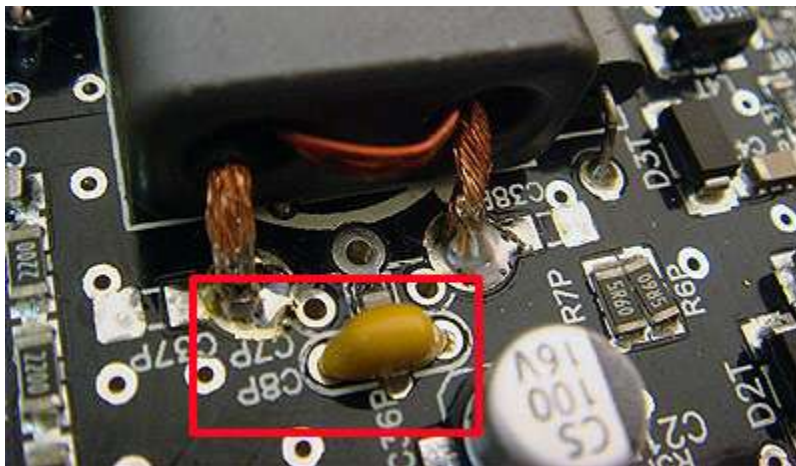
Install a short jump wire to connect the braid to the pad as shown on the photo. [Tap "C"]

b-b1 side:

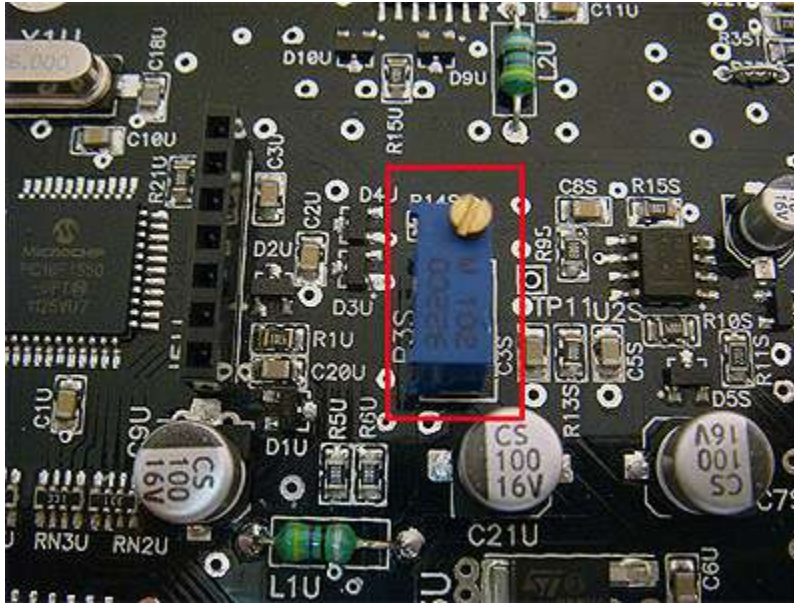


This completes installation of the PA transformer.

Install capacitor C8P [100pF]

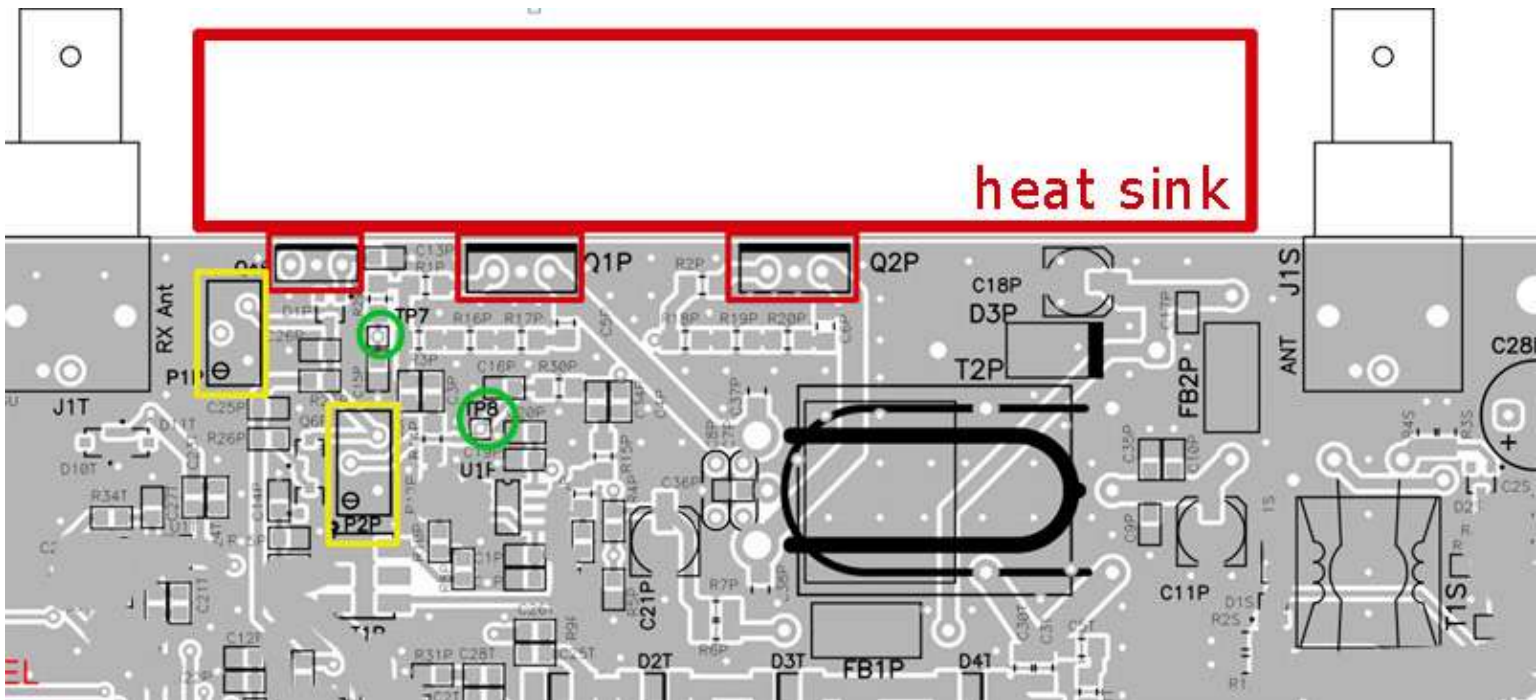


Install trimmer P3S [1K]



Install PA mosfets Q1P, Q2P and temperature sensor Q4P.

NOTE: The heat sink is not provided.



PA Bias adjustment

Adjustment procedure:

1. Connect G11's antenna connector to the watt meter and 20W (minimum rating) dummy load.
2. Power-up the G11. Connect to PC via USB cable. Do not connect sound card cables yet!
3. Start GSDR. Click TUNE.
4. Adjust trimmer P1P so that the voltage at test points TP7 is +4.3V
5. Adjust trimmer P2P so that the voltage at test points TP8 is +4.3V
6. With TUNE ON, the total current consumption should be between 1.3 and 1.5A. There should be NO power output measurable on the watt meter however after 60 seconds the heat sink should be slightly warm.
7. Now connect the sound card output to the G11 board. Click TUNE and slowly increase DRIVE slider until you reach an output power of 10W. If the output power is still low, try to increase it; go to GSDR - Setup - General- Sound Card and enter a lower value in the Output Voltage box. Default value is 1V. Suggested value is 0.5V. For 10m and 6m you may need to slightly adjust LP filter inductors by squeezing / spreading coils.