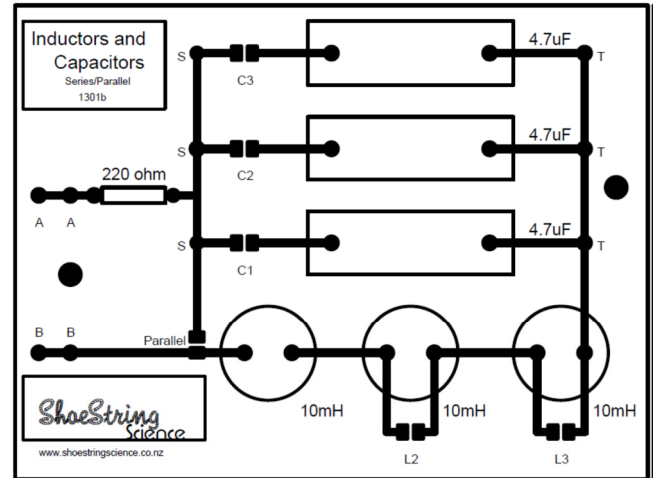
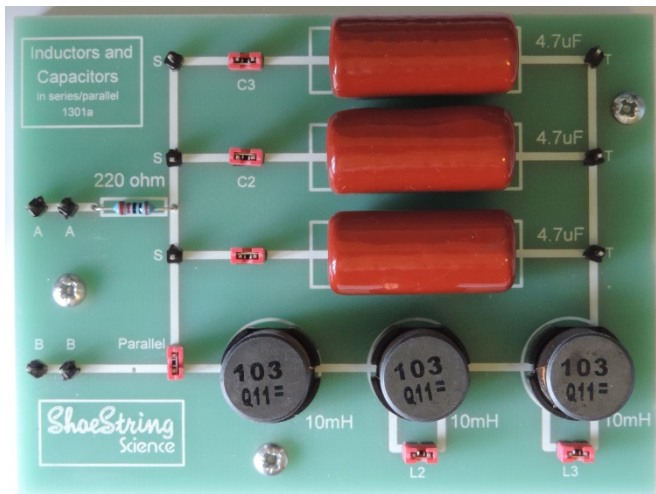


# Inductors and Capacitors in series / parallel (1301b)



(Note A, B, S and T have single pins suitable for crocodile clip connections. Board size 101mm x 76mm)

This board is designed to facilitate the exploration of series and parallel circuits involving capacitors and inductors. Using jumpers the capacitance value can be selected as 4.7uF, 9.4uF or 14.1uF and the inductance value can be selected as 10mH, 20mH or 30mH (all nominal values). These values give a range of possible resonance frequencies from 240Hz to 740Hz.

The jumper can be used to select either a series or parallel arrangement of the capacitors and inductors.

Other equipment needed to fully utilise the board would include -

- A means of producing a variable frequency sine wave signal. It must be able to supply several milliamps of current. Eg Signal generator
- A means of measuring AC voltage at millivolt levels. Eg a digital multimeter (some) or an oscilloscope.
- A means of determining frequency. Eg accurately calibrated signal generator, digital multimeter with Hz scale, or an oscilloscope.

In addition to series and parallel resonance experiments, it is possible to isolate the inductors to show the charging and discharging curves using an oscilloscope (and get an approximate time constant)

Phase changes across the various reactive components as they pass through the resonance points can also be seen using a dual trace oscilloscope or a suitable computer interface.