Start with the impedances of discrete components:

With each of them in parallel, the impedance is:

Add a matching inductor:

Some algebra

Resonance: Imaginary part equal to zero

Resonance Frequency of an LCLR circuit:

If L0 = L1,

if ,

High resonant frequency:

Low resonant frequency:

Define:

A degenerate resonant frequency is apparently not possible with real passive components.

Impedance of an LCLR circuit at resonance:

Alternate scenario: What if (as I have modelled), the resistor is in series with the inductor. Will anything change?

Resonance: Imaginary part set to zero

If ,