Frequency Response Measurements
Laboratory IV

Patrycja Nazim, Adrian Król, Gabriel Ćwiek, Kamil Chaj

1   Goal of the exercise

2   Frequency response

3   Course of measurements

(a) RC low-pass filter

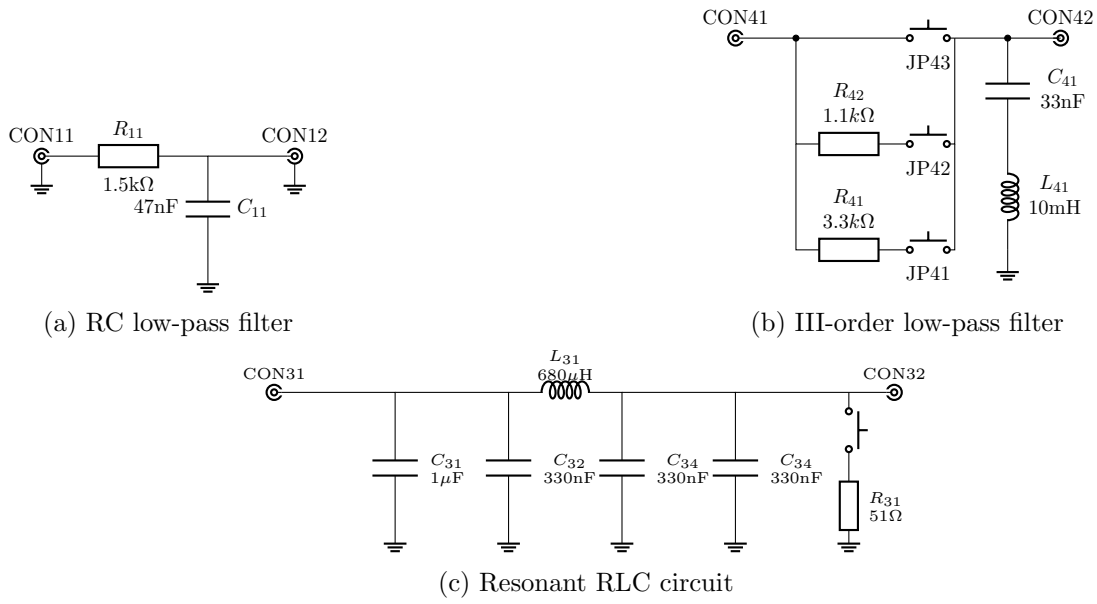(b) III-order low-pass filter

(c) Resonant RLC circuit

Figure 1: Measured circuits

4   Data processing

Source code for this section can be found in Appendix A

First step in finding amplitude-frequency characteristics was calculating gain in Volts

$$\text{Voltage gain [V]} = \frac{V_{\text{CON2}}}{V_{\text{CON1}}} \qquad (1)$$

then we calculated voltage gain in decibels

$$\text{Voltage gain [dB]} = 20 \log_{10}(V_{\text{gain}}) \qquad (2)$$

Voltage gain is on the left plot in figure 2, vertical blue axis represents scale in volts and orange axis decibel scale.

Phase-frequency characteristics didn't require any calculation and is simply plotted on the right plot in figure 2.
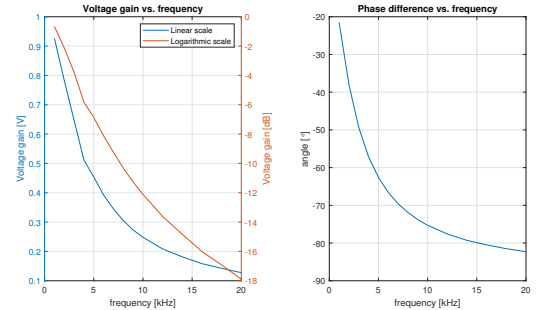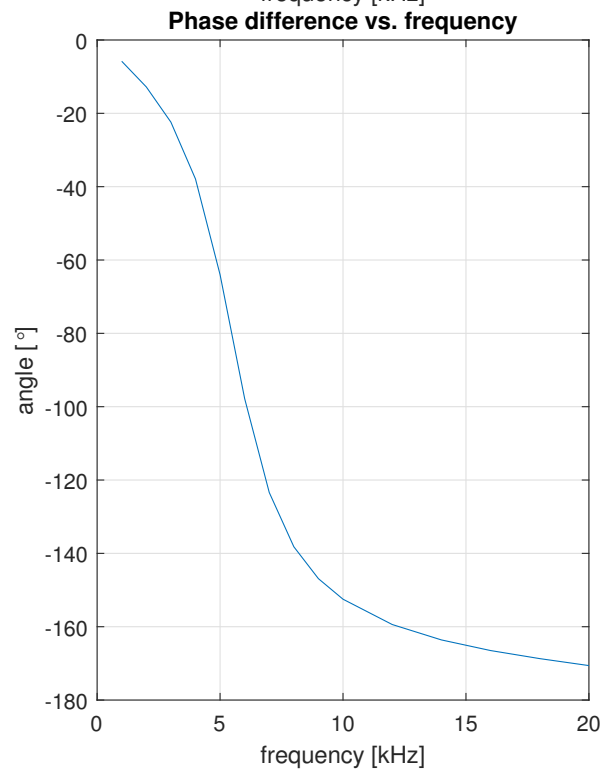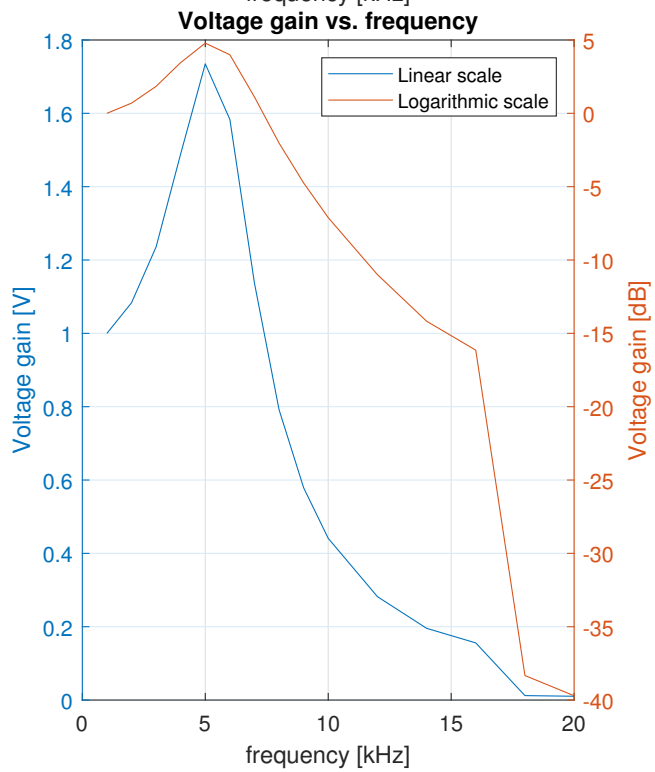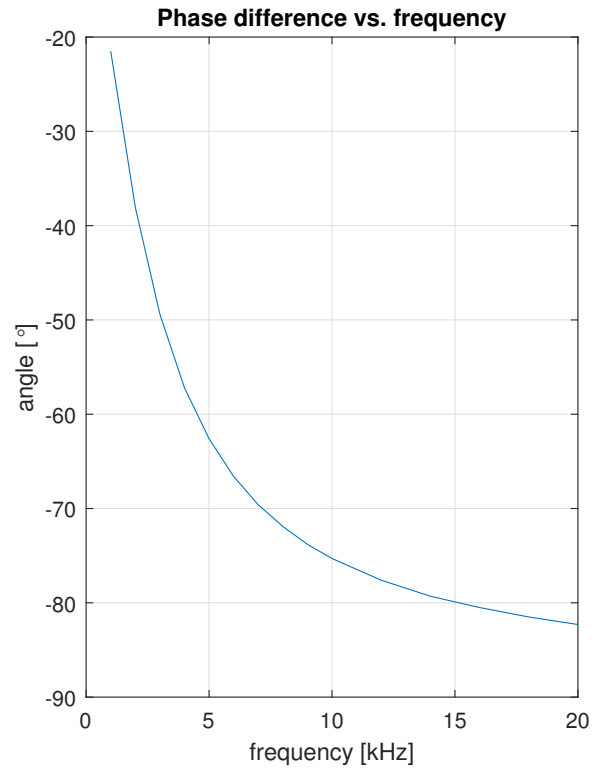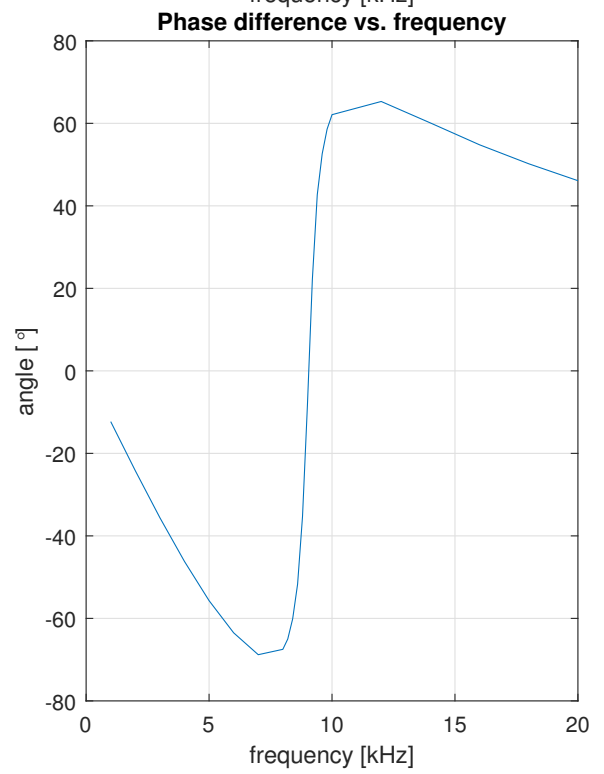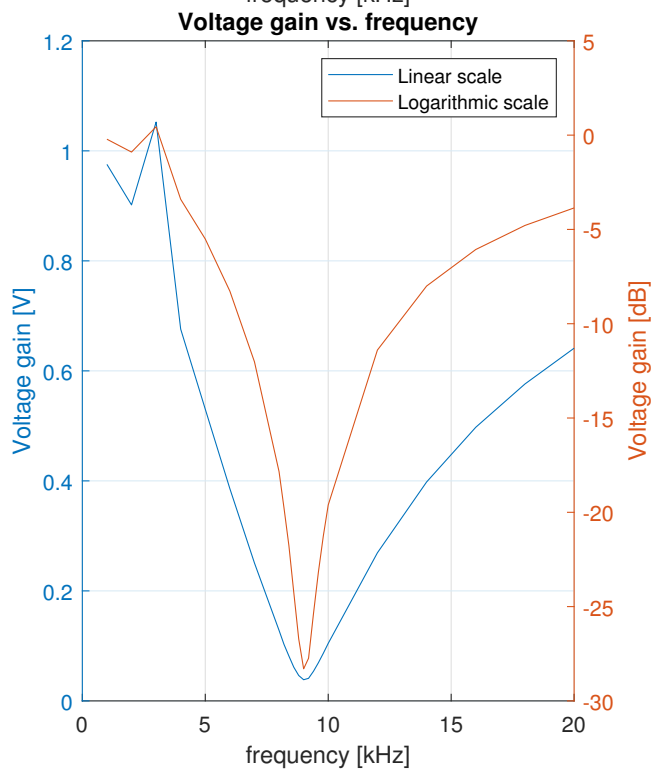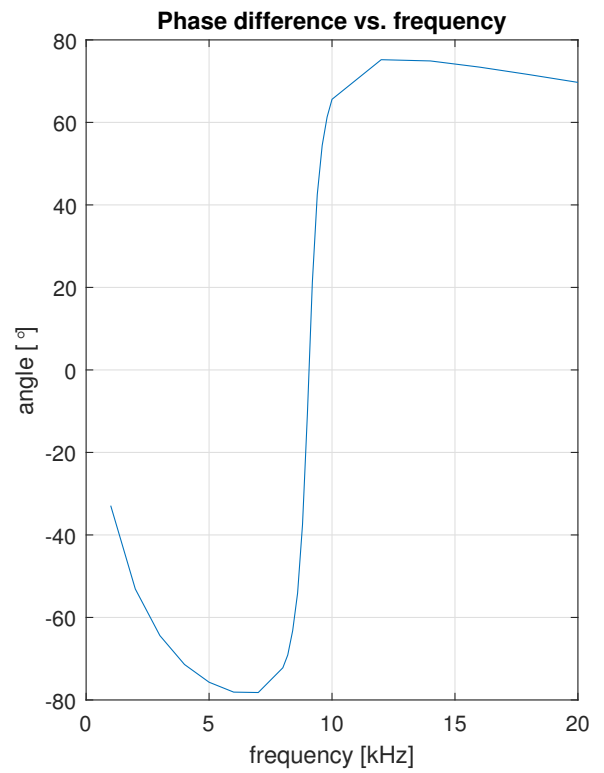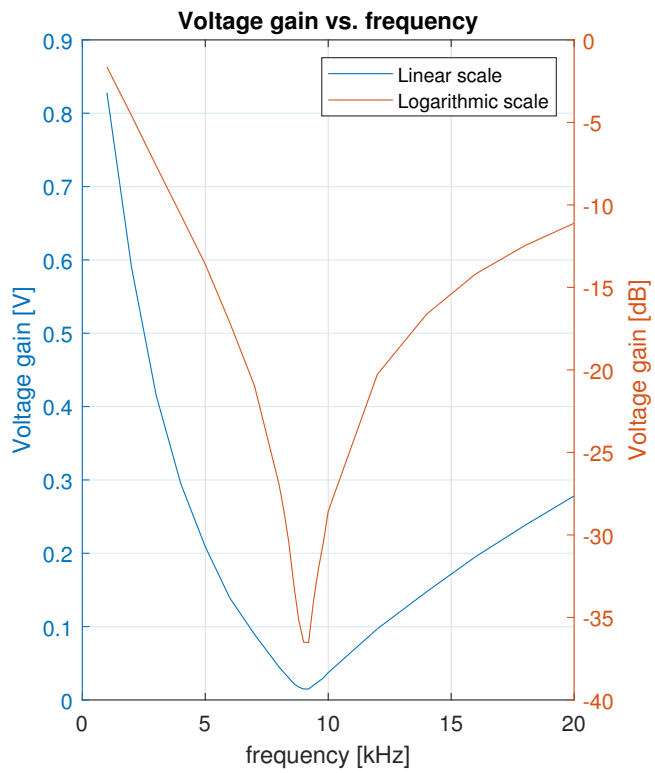

Figure 2: Example

5 Characteristics analysis
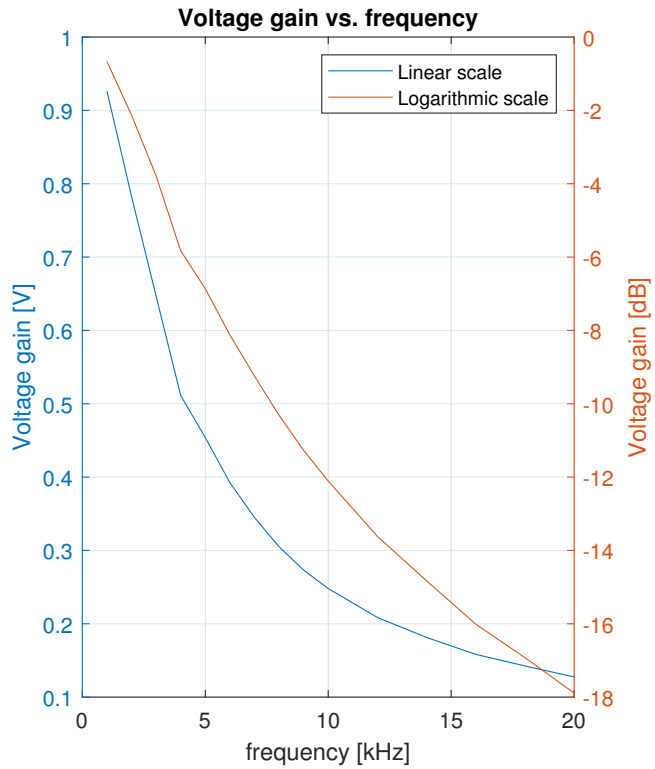
6   Conclusions

A   Appendix