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EEE117L Section 06

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Pre-lab 4 (Week 1): Low Pass Filters

Table 1. Low frequency gain and phase shift for the output voltage of the passive circuit.

|  |  |  |  |  |  |  |  |
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| **Passive Circuit** | | | | | | | |
| **Vout** | | | | **Vout (3db frequency)** | | | |
| Low Frequency Gain (Hz) | | Phase Shift (°) | | Low Frequency Gain (Hz) | | Phase Shift (°) | |
| Theoretical Value | Experimental Value | Theoretical Value | Experimental Value | Theoretical Value | Experimental Value | Theoretical Value | Experimental Value |
|  |  |  |  |  |  |  |  |

Table 2. Low frequency gain and phase shift for the output voltage of the passive circuit with a 1K load resistor.

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Passive Circuit with 1K Load Resistor** | | | | | | | |
| **Vout** | | | | **Vout (3db frequency)** | | | |
| Low Frequency Gain (Hz) | | Phase Shift (°) | | Low Frequency Gain (Hz) | | Phase Shift (°) | |
| Theoretical Value | Experimental Value | Theoretical Value | Experimental Value | Theoretical Value | Experimental Value | Theoretical Value | Experimental Value |
|  |  |  |  |  |  |  |  |

Table 3. Low frequency gain and phase shift for the output voltage of the active circuit.

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Active Circuit** | | | | | | | |
| **Vout** | | | | **Vout (3db frequency)** | | | |
| Low Frequency Gain (Hz) | | Phase Shift (°) | | Low Frequency Gain (Hz) | | Phase Shift (°) | |
| Theoretical Value | Experimental Value | Theoretical Value | Experimental Value | Theoretical Value | Experimental Value | Theoretical Value | Experimental Value |
|  |  |  |  |  |  |  |  |

Table 4. Low frequency gain and phase shift for the output voltage of the active circuit with a 1K load resistor.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Active Circuit with 1K Load Resistor** | | | | | | | |
| **Vout** | | | | **Vout (3db frequency)** | | | |
| Low Frequency Gain (Hz) | | Phase Shift (°) | | Low Frequency Gain (Hz) | | Phase Shift (°) | |
| Theoretical Value | Experimental Value | Theoretical Value | Experimental Value | Theoretical Value | Experimental Value | Theoretical Value | Experimental Value |
|  |  |  |  |  |  |  |  |

Figure 1. Calculated transfer functions of the fourier circuit used in Part I.

