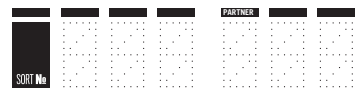


Kit No.   Date:   /   /

USE TEMPLATE  
01234  
56789  
MISFILL -1 PT



# LABORATORY 10

Please print this sheet prior to coming to laboratory. Complete the pre-laboratory tasks in your lab notebook. Complete the lab tasks in **both** your lab notebook and this submission sheet.

## 1 Pre-laboratory Verification

<div>3E .. 59</div>	<div>3E .. 60</div>	<div>3E .. 61</div>
<div>3E .. 62</div>	<div>3E .. 63</div>	<div>3E .. 64</div>

## 2 Laboratory Verification

<div>3E .. 65</div>
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### 3 Deliverables

1. Attach a printout of the **bldc\_controller.vhd** VHDL code.
2. Attach a printout of the block diagram.
3. Assuming that the motor spins at 7,200 RPM when the period of one full rotation is 231.17  $\mu$ s, calculate the approximate speed of the motor if the period is 12 ms (six states of 2 ms each). Show your calculations or dimensional analysis.

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4. How does the pitch of the motor change as you connect more signal leads? Explain why.

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5. Can the motor be started from a stopped state with all three signal leads connected? Why or why not? Provide a detailed explanation.

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