

UNCC, Department of Electrical and Computer Engineering
ECGR4101/5101, Fall 2006, Homework #5, Due: 10/3/06, at the beginning of class (20 points)

You will need to refer to the M16C/20/60 Software Manual, the M16C26 Hardware Manual and M16C C Language Programming Manual to complete this assignment. They are available online through the Documentation contained in the SKP16C26 directories link on the course home page.

0. (1 point) How long did this homework take you?
1. (2 points) What is the output code (in decimal) of a 5-bit ADC with $V_{in}=8.8V$, $V_{+ref}=10 V$, $V_{-ref}=0 V$?
2. (2 points) What is the output code (in decimal) of an 8-bit ADC with $V_{in}=2.2V$, $V_{+ref}=5 V$, $V_{-ref}= 1.5 V$?
3. (2 points) What is the output code (in decimal) of an 10-bit ADC with $V_{in}=2.2V$, $V_{+ref}=5 V$, $V_{-ref}= 0 V$?
4. (2 points) What is the maximum quantization error for an 10 bit ADC with $V_{+ref}=3.3 V$, $V_{-ref}=0 V$?
5. (5 points) Write the code to set up an A/D conversion for the first channel, 10-bit sample-and-hold, one shot and store the data in *unsigned int sample*. Include all set-up commands needed.
6. (6 points) Write the code to take this 10-bit sample and output it on the first DAC. Include all set-up commands needed.