Practical 4
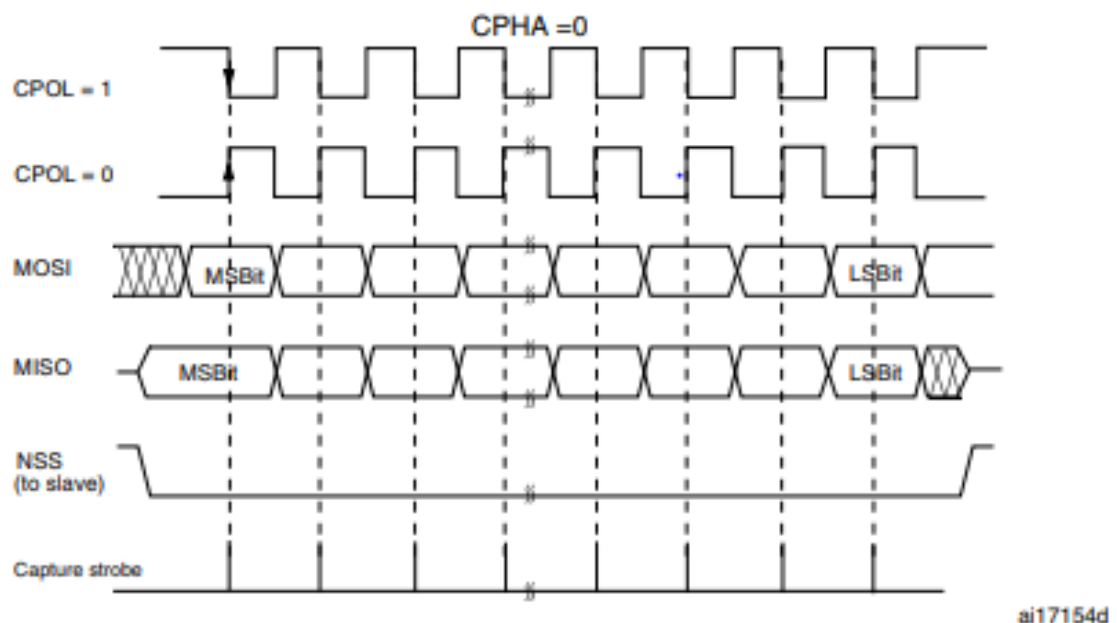
Jason Zebert – ZBRJAS001
Daryn Flanegan – FLNDAR001

1.

   a. During SPI communication, receive and transmit operations are performed simultaneously. The serial clock (SCK) synchronizes the shifting and sampling of the information on the data lines. The CPHA mode sets when the data is sampled (first or second edge) and the CPOL mode determines whether this on a rising or falling edge. The combination of these settings sets the SPI mode. When SS goes low it enables the slave. The data bits begin transfer and are then sampled according to which SPI mode chosen (the dotted lines show when the data is sampled). When SS goes high the slave is disabled again.

   b. **Interrupt** – A signal which interrupts the current flow to the processor to execute a specific request. This signal can be sent by hardware and/or software.
Threaded call-back – A call back is executable code that is passed to a function as an argument. This allows the CPU to run multiple threads simultaneously

   c. *def ConvertVolts(data, places):*
        volts = (data * 3.3) / float(1023)
        volts = round(volts, places)
        return volts

d. *def Temperature (voltage):*
   temp = voltage
   temp = int ((temp - 0.5)/0.01)
   return temp

e. *def Percent (voltage):*
   *per = (int (voltage/3.1*100))*
   return per

f.