

EE3220: Display System

1. Describe the terms interlaced scanning and progressive scanning.
2. Describe the operation principle of LC for display.
3. Why does an illumination source is needed for LCD panel?
4. Describe the methods for generating gray level in passive TN/STN LCD panel.
5. What is the difference between FRC and time base dithering?
6. How does active TFT LCD produce gray level?
7. Considering that a STN LCD display is connected to the S3C44B0x processor, the LCD display is of resolution 320 x 240 and, find (a) screen buffer size, and (b) data rate (bytes/sec) from LCD controller to the LCD display panel for frame rate of 60 Hz, for the following display modes:
 - (i) Monochrome 8-bit
 - (ii) Color 8-bit single scan.
8. Describe the term “color palette” and it function?
9. Describe the VIDPROCS operation of the S3C44B0x LCD controller.
10. A S3C44B0x based system is running with a master clock of 66MHz and connected with a STN LCD with resolution of 480 x 270 and display frame rate of 30 Hz. The system memory used is SDRAM HY57V641620HG.
 - (i) Determine the bus load for a 16 gray level LCD, with (a) 16-bit data bus and (b) 32-bit data bus.
 - (ii) Determine the bus load for a 256 color LCD, with (a) 16-bit data bus and (b) 32-bit data bus.