ECE 272 Pre-Lab 6
Fall 2018

Video Graphics Array (VGA)
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1. Read everything you can about VGA

2. Create a block diagram and write about how it works.

   A video graphics array (VGA) connector is a three-row 15-pin connector that carries analog component RGBHV (red, green, blue, horizontal sync, vertical sync) video signals and VESA display data channel (VESA DDC) data. The pinout of a VGA female socket is illustrated by Figure 1 below:
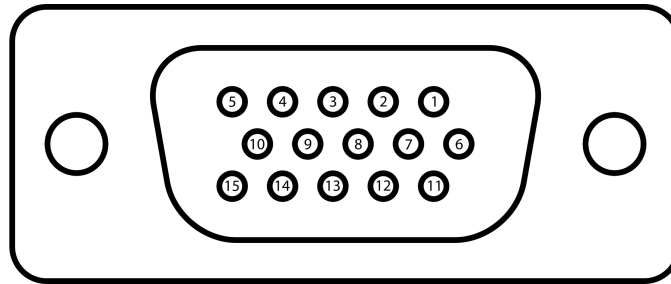

Figure 1: A female VGA socket

The pin layout of this socket is explained in Table 1

Pin	Signal	Description
1	RED	Red video
2	GREEN	Green video
3	BLUE	Blue video
4	ID2/RES	formerly Monitor ID bit 2 Reserved since E-DDC
5	GND	Ground (H-Sync)
6	RED_RTN	Red return
7	GREEN_RTN	Green return
8	BLUE_RTN	Blue return
9	KEY/PWR	formerly key now +5V DC
10	GND	Ground (V-Sync, DDC)
11	ID0/RES	formerly Monitor ID bit 0 reserved since E-DDC
12	ID1/SDA	formerly Monitor ID bit 1 PC data since DDC2
13	HSync	Horizontal sync
14	VSync	Vertical sync
15	ID3/SCL	formerly Monitor ID bit 3 I2C clock since DDC2

Table 1: VGA pin layout

Using the red, green, blue, hsync, and vsync signals, the VGA can encode these color into

information to transfer to a display device which essentially displays the specified graphics to the real world.

For each line of the screen, there is an empty line where no graphics are displayed, allowing the "cursor" to move back from the right edge to the left edge of the screen and get ready for displaying the next line of graphics.