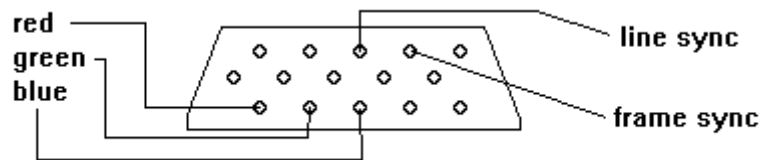


Studying VGA monitor signals

You will need to be able to probe the connections between a computer and its VGA monitor with an oscilloscope. The computer will need loading with software which can paint its screen in various patterns of colours.

- 1 The pins you need access to are shown below, looking into the socket of the computer. You should be able to insert breadboard wire straight into the holes.



- 2 Look at the line and frame sync signals with the oscilloscope. Sketch their waveforms, with suitable scales. Calculate the frame rate and the number of lines per frame.
- 3 Display one cycle of the line sync signal on the oscilloscope screen.
- 4 Use the other channel of the oscilloscope to display the red signal. Paint the screen with alternating vertical stripes of red and black. Sketch the waveform of the red signal.
- 5 Paint one vertical stripe of each colour shown in the table, so that they fill the width of the screen between them.

colour
black
blue
green
cyan
red
magenta
yellow
white

- 6 Sketch the red, green and blue waveforms as seen on the oscilloscope screen. Explain their shapes.