

Mesleki Yabancı Dil 1 Dersi

Ankara Üniversitesi Elmadağ Meslek Yüksekokulu

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(Bu çalışma Marija Krznaric tarafından yazılmış ELECTRICITY AND ELECTRONICS isimli kitaptan alınan özet bilgilerle hazırlanmıştır.)

Hafta 8

FROM CAMERA TO SCREEN

- A television camera contains a lens system which is used to focus an image of the object on to the face of the camera tube. This tube contains a photo-cathode which emits electrons in response to light.
- The brighter the light from the image, the more electrons are emitted by the photo-cathode.
- In a black and white camera, the photo-cathode responds only to brightness, hence it is at this point that information on the colour of the image is lost.
- The electrons from the cathode are now made to strike a target electrode causing some of its atoms to become positively charged.
- The target electrode is scanned by an electron beam. The beam sweeps the target electrode in a series of closely spaced lines.
- There are 405 or 625 of these lines depending on the system used.
- When the beam reaches the end of the top scan line, it is brought quickly back to the beginning of the next line which is slightly lower. This return is called fly-back and is much quicker than a line scan.

- The scanning beam loses electrons to the positively charged atoms on the target electrode and is thus changed or modulated.
- Its density is thus proportional to the light intensity of the original image. In this way the camera produces a continuous waveform which contains information on the brightness of the original image.
- This video waveform has information added to it, sync pulses, to synchronise the start of each scanning line and frame.
- The video signal is transmitted and received in a similar fashion to sound transmissions. After detection and amplification it is fed to the cathode or the CRT in the television receiver thus controlling the intensity of the electron beam.
- The sync pulses ensure that the beam in the CRT is in exactly the same position as the beam in the television camera.
- The beam is made to move sideways and progressively downwards matching line by line the scanning of the television camera.
- As the electron beam strikes the television screen, the phosphor coating on the screen emits light.