Mobile Device Displays

At the end of this episode, I will be able to:

1. Identify mobile device display technologies.

Exam Objective: 1.2 - Compare and contrast the display components of mobile devices.

Description: In this episode, the we will be discuss the concepts surrounding modern mobile device displays such as passive and active matrix, In-plane switching (IPS), Twisted nematic (TN), Vertical alignment (VA\, organic light-emitting diode (OLED), touchscreens, contrast ratio, inverters and more.

- Liquid crystal display (LCD)
    - Passive matrix
        - Slow changes
        - Blurry images
    - Active matrix
        - Faster changes

        - Brighter images
- In-plane switching (IPS)
    - Good - Faster
    - Good - Wider angles
    - Good - Higher color/contrast than many VA and TN panels
    - Good - Color accuracy
    - Bad - Motion blur
- Twisted nematic (TN)
    - Good - Fastest response times
    - Good - Reduction of motion blur
    - Good - Lowest cost panel technology
    - Bad - Reduced viewing angle
    - Bad - Reduced color accuracy and contrast ratio
- Vertical alignment (VA)
    - Good - Highest contrast than TN panels

    - Good - Wider viewing angles than TN panels
    - Good - Color accuracy
    - Good - High-end VA panels will rival IPS panels

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Contrast ratio is the measured difference between the darkest blacks and the brightest whites a monitor can produce. This measurement provides information about the amount of grayscale detail a monitor will deliver. The higher the contrast ratio, the more visible detail.

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- Organic light-emitting diode (OLED)
- Touch screens
- Replacement
    - Digitizer
    - Inverter
    - Antenna placement

- Additional Reference Materials

Display Technologies:

https://www.viewsonic.com/library/photography/what-is-an-ips-monitor-panel/#What_is_OLED