

## Smart Devices Displays

### Smart Device Displays

#### ❖ Shatterproof Glass

- Seamless surface
- Provides a very smooth luxurious feel
- Shatterproof Glass is the best surface for smartphones

## Smart Device Displays

### ❖ Gorilla Glass

- Specialized toughened shatterproof glass that is scratch-resistant to prevent deep scratches that can weaken glass
- Introduced at CES 2013 by Corning

### ❖ Oleophobic Coating

- Physical property of a molecule that is repelled from Oil (means “fear of oil”)
- Used on the smartphone’s surface for fingerprint-resistance & anti-smudging

## Smart Device Displays

### ❖ AMOLED

(Active-Matrix Organic Light-Emitting Diode)

- AMOLED display technology is used in TVs and smartphones
- OLED (Organic Light-Emitting Diode) is a thin-film-display technology that uses organic compounds to form the electro luminescent material

## Smart Device Displays

### ❖ Super AMOLED

- Super AMOLED is an AMOLED display with an integrated digitizer
  - Touch detection layer is (not overlaid) integrated into the smartphone screen
- Characteristics
  - Thinner Display
  - Lower Power Consumption
  - Improved sunlight reflection characteristics, which improve the screen's outdoor viewing properties

## Smart Device Displays

### ❖ Super AMOLED Plus

- Traditional RGB stripe is used instead of PenTile RGBG matrix (2 subpixels/pixel)
- Brighter and more energy efficient than Super AMOLED
- Used in Samsung Galaxy S II

## Smart Device Displays

### ❖ HD Super AMOLED

- HD resolution (above 1280x720)  
Super AMOLED display
- PenTile RGBG matrix
- Used in Samsung Galaxy S III, Note I

## Smart Device Displays

### ❖ Full HD Super AMOLED

- 1080p HD resolution (1980x1080)  
Super AMOLED
- PenTile RGBG matrix with a new subpixel arrangement called Diamond Pixel
- Used in Samsung Galaxy S4, S5, Note 3

## Smart Device Displays

### ❖ WQHD Super AMOLED

- WQHD resolution (above 2560x1440)  
Super AMOLED
- PenTile RGBG matrix
- Used in Samsung Galaxy S6, S7, S8,  
Note 4, Note 5, Note8

## Smart Device Displays

### ❖ IPS (In-Plane Switching)

- LCD (Liquid Crystal Display) screen technology used for liquid crystal layer molecule orientation (arranging and switching between the glass substrates)
- Characteristics
  - Accurate color and consistent image from wide viewing angles
  - When screen is touched there is no tailing or lighten effect on the screen
  - Clear images and stable response time

## Smart Device Displays

### ❖ LED-Backlit LCD Display

- LED backlighting flat panel display tech.
- Improvements compared to CCFL (Cold Cathode Fluorescent) Backlit LCDs (which was commonly used in LCDs)
  - Improved images with greater dynamic contrast & wider dimming range
  - Slimmer screen → Reduced weight

## Smart Device Displays

### ❖ LED-Backlit LCD Display

- More Improvements
  - RGB-LED backlighting results in wider color gamut (range of colors identifiable by the human eye)
  - Reduced heat emission
    - Reduced power consumption
  - More reliable and longer product lifespan

## Smart Devices References

### References

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