OD6630

AMOLED product brief

Full High Definition 144 Hz AMOLED Driver IC for Smartphone Displays

OMNIVISION Display Solutions' OD6630 AMOLED display driver integrated circuit (DDIC) leverages OMNIVISION's proven image algorithm, high quality and stable supply chain to help tier-one AMOLED panel manufacturers speed time to market. It supports high performance in display with low power consumption.

OD6630 enables SPR 1284 pixel full high definition (WFHD+) resolution and up to 144 Hz display frame rate for smartphones.

OD6630 is in mass production in tier-one AMOLED panel manufacturers, and OD6630 will be held to a high quality standards for customers.

Find out more at www.ovt.com.

OD6630

Ordering Information

- OD6630-A1H-EHV30Z-0
  (general customers, 3 inch tray)

Applications

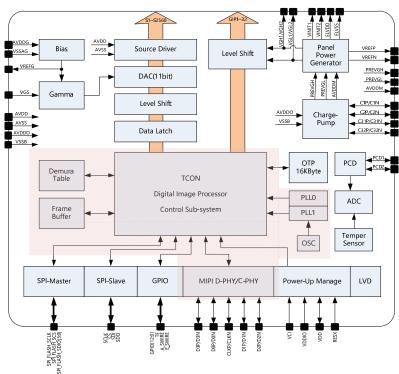- smartphones

Product Features and Benefits

- single chip FHD+ AMOLED solution
  (up to 1284 x 2800 with SPR)

- 2568ch source outputs

- 32ch programmable GIP control
  signals
  - support dual power domain
    for LTPO panel
  - separated configurable power
    domain
  - separated configurable slew-rate
  - separated configurable EQ time

- SPR
  built-in delta-RGB/GGRB/Diamond
  sub-pixel rendering function

- VESA DSC 1.2a decompression
  function

- display mode
  - up to 144 fps dynamic frame rate
    control with QSYNC support
  - video/command mode seamless
    switching
  - command mode with internal 1/3
    or 1/3.75 compressed GRAM
    (1284*2800*24bpp*1/3 or
    1284*2800*30bpp*1/3.75)

- in-house 1/3 compression/
  decompression function

- interface
  - up to 1.5 Gbps*4 lane (D-PHY)
  - up to 0.9 Gsps*3 trio (C-PHY)
  - support SWIRE/SPI/I2C interface
    for external PMIC
  - dual SWIRE interface:
    A-SWIRE and E-SWIRE
  - support 1-bit/2-bit/4-bit
    SPI-flash interface

Product Features and Benefits (continued)

- round corner/notch process

- local HBM for customized shape
  and region

- separate gamma and gamma
  transition for customized UDC/
  local HBM region and shape

- IR-drop compensation
  - dynamic global IR-drop
    compensation
  - static local IR-drop compensation
  - content adaptive IR-drop
    compensation

- demura
  - support 1x1 demura
    with 8x ~ 16x compression

- gamma
  - individual gamma curve
    for R/G/B
  - separate gamma table
    for UDC/HBM
  - gamma interpolation
    for transition zone

- brightness control
  - PWM brightness control
  - DC brightness control
  - gamma interpolation with DBV support
  - digital data mapping

- support temperature compensation for
  ELVSS with internal temperature sensor

- support AOD mode
  with internal generated ELVDD/ELVSS

- power saving function
  - ACL (auto current limitation)
  - dynamic ELVSS control
  - blanking off

- color enhancement
  - color space management
  - color temperature adjust
  - saturation enhancement
  - sharpness enhancement
  - brightness enhancement
  - skin-tone and local hue adjustment

- 16KB built-in OTP memory

- package: COP

- die size: 32910 x 1570 x 170 µm

Functional Block Diagram

OMNIVISION®