



CRX2000A

TED IC product brief

T-CON Embedded Driver IC for Next-Generation Notebook Display

OMNIVISION Display Solutions' CRX2000A T-CON embedded driver IC (TED IC) is designed for 2160 x 1350 (LTPS), 1920 x 1080 / 1200 / 1280 (a-Si, Oxide, and LTPS) LCD TFT panels and is the best fitted solution for low cost and low power consumption. CRX2000A can be mounted on COG (chip on glass) area and supports 1/2/4 lanes eDP 1.4b MSO (multi-SST operation) input interface with HBR, R243, R216 and RBR, and 2880ch source driver output.

CRX2000A provides a 1-chip solution for a-Si, Oxide, and LTPS panels. It can also support a 2-chip solution for panels

with VESA MSO feature, up to 2880 x 1920 with a-Si dual gate or LTPS MUX2/3.

CRX2000A supports an external I2C EEPROM read/write function. It also supports accessing internal registers by eDP I2C-over-aux, I2C. An SDK (system development kit) is available to enable fast light-up, fine-tune and optimize panel performance for customers.

Find out more at www.ovt.com.



- CRX2000AC-AOS-EGVDAZ-0 (4 inch tray)
- CRX2000AC-AOS-EGVCAG-0 (3 inch tray)

Applications

- notebooks

General Features

- common features:**
 - power supply
 - logic supply voltage: 1.2V
 - LCD driving voltage:
 - AVDD 4.0V ~ 6.0V, AVEE -6.0V ~ -4.0V
 - IOVCC 3.0V ~ 3.6V
 - output dynamic range: -5.4V (>AVEE+0.2V) to GNDA-0.2, GNDA+0.2 to 5.4V (<AVDD-0.2V)
 - VGH supply voltage +8V ~ +20V
 - VGL, VGLp supply voltage -7V ~ -12V
 - VGH-VGL must be less than 32V
 - COG package
 - operation temperature: -20°C ~ +85°C
- eDP features:**
 - support the following bit rate mode: HBR (2.7 Gbps), R243 (2.43 Gbps), R216 (2.16 Gbps), RBR (1.62 Gbps)
 - support main link Vdiff: 200 mV (min)
 - support 1 and 2 lanes main link configuration
 - support full link training and fast link training
 - support MSO (multi-SST operation) working on COG
 - support AdaptiveSync, FreeSync
 - support I2C-over-aux
 - support DisplayPort standard SSC 0.5% down-spreading

General Features (continued)

- T-CON block features:**
 - programmable GIP signals up to 42 outputs for GIP panel (left x21, right x21)
 - support SDK (system development kit to light-up, debug and fine-tune easily)
 - support APPS (advanced panel power saving) function that is PSR-like function without frame buffer
 - support I2C serial port interface master/slave
 - support 18/24-bit RGB input
 - digital gamma
 - color management
 - noise avoidance for touch panel
 - support panel BIST mode
 - support CAB
 - support eDP MSO
- source driver features:**
 - 2886/2880/2166/2160/1926/1920 output channels
 - 2880ch: 1920 x 1280, 1920 x 1200, 1920 x 1080 for a-Si single gate (2-chip) or dual gate (1-chip)
 - 8-bit resolution / 256 gray scale
 - dot (1/2 dots) and N-line (N=1/2/4) inversion display function provided
 - repair amplifier
 - embedded gamma buffers
 - adjusting gamma correction
 - low frame rate for saving power consumption
 - contact resistance measurement
 - XAO signal from PMIC
 - voltage detector:
 - 4 voltage setting of IOVCC
 - GAS (gate all select) function for preventing image sticking when abnormal power off
- GIP features:**
 - programmable GIP signals up to 42 outputs for GIP (left x21, right x21)
 - integrated level shifter
 - support single gate, dual gate driving method
 - EQ function of GIP output

Functional Block Diagram

