MICRODISPLAY CONTROLLER GUIDE VER 2.0

RDC series provides image processing algorithm along with LED controlling and data formatting for RDP series. One controller IC drives two panels simultaneously.
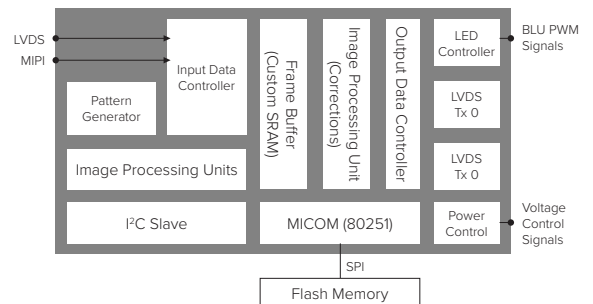
RDC200

Image Size: HD to FHD
Input Format: LVDS, MIPI
Dimension: 7.4 x 7.4 mm
*CoKOA: Correction of Keystone
 and Optical Aberrations

RAONTECH

FEATURES

SUPPORTS · RDP series (RAON LCoS Display Panel)

VIDEO INPUT · Image size : up to FHD (1920 x 1080) or 2048x1024 (2K1K)
· Frequency : HD / FHD (up to 60 Hz)
· Format : LVDS, MIPI

VIDEO OUTPUT · Left / Right x (8 Data Channels + 1 Clock Channel)
· Data Rate : max. 1 Gbps
· Include COMMAND and OPTION packet
  (RDI - RAON Display Interface)
· Left and right image for 3D

KEY FUNCTIONS · Programmable LED current control adjustment
· Horizontal and vertical image flip and shift
· Programmable gamma correction and VCOM
· Optical image distortion and keystone correction

EMBEDDED PERIPHERALS · Frame buffer
· 8 bit MICOM

PACKAGE SIZE · 7.4 x 7.4 mm (196-pin eWLB)

FUNCTIONAL BLOCK DIAGRAM

APPLICATIONS

· Head-Mounted Display

· Head-Up Display

· Pico Projector

· AV Projector

· VR

GENERAL DESCRIPTION

The RDC200 performs image processing and control along with parallel data formatting to drive 0.7-inch 1440P panel (RDP700Q), 0.55-inch 1080P panel (RDP551F), 0.5-inch 720P panel (RDP502H), and 0.36-inch 720P panel (RDP360H).

The RDC200 includes a very low-power, low-voltage-differential-signaling (LVDS) serialized interface for video data transport that minimizes the number of board interconnections and connector size, reduces electromagnetic emissions (EMI), and enables a lightweight and flexible cable link from a video source. Compatibility with standard LVDS drivers (OpenLDI) and MIPI DSI simplifies the system integrator's task.

The RDC200 interfaces with an LED driver via GPIO or option packet in RDI LVDS Transmitter. It sends strobes to indicate when each of the red, green, blue LEDs should be enabled or disabled, and frame synchronous command/option packets are used to control panel side such as the brightness of the LEDs, and so on.

PRODUCT HIGHLIGHTS

1. Variable Input ports
2. Support dual FHD (1920x1080) or HD (1280x720)
   LCoS panels simultaneously
3. One clock source
4. Ultra-low power consumption with embedded frame buffer
5. Real-time one-shot optic/perspective correction

6. Stand-alone display is possible
   (User-defined bitmap images and bitmap font)
7. Embedded MICOM with programmable wide-voltage I/Os
8. Easy to use and configure
9. Simple LED Driver Control