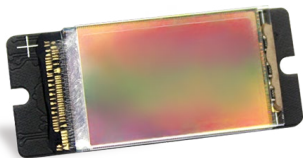


# MICRODISPLAY PANEL GUIDE VER 1.1

RDP series consists of highly integrated LCoS microdisplay panels for optical display system such as AR-VR smart glasses, FPV goggles, HMD (Head-Mounted Display), HUD (Head-Up Display) and pico projectors. RDP series provides high resolution in a highly compact panel.



## **RDP700Q**

Resolution: WQHD (2560 x 1440)  
HD/FHD to QHD Video Scaler  
Active Area: 0.7"  
Dimension: 28.3 x 12 mm



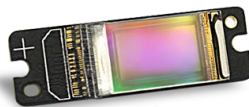
## **RDP551F**

Resolution: Full HD (1920 x 1080)  
& 2K1K (2048 x 1024)  
Active Area: 0.55"  
Dimension: 25.9 x 10 mm



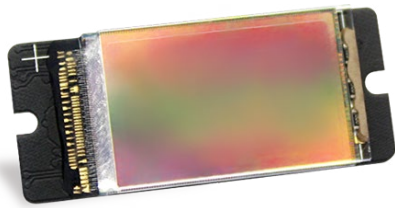
## **RDP502H**

Resolution: HD (1280 x 720)  
Active Area: 0.5"  
Dimension: 25.0 x 11.0 mm

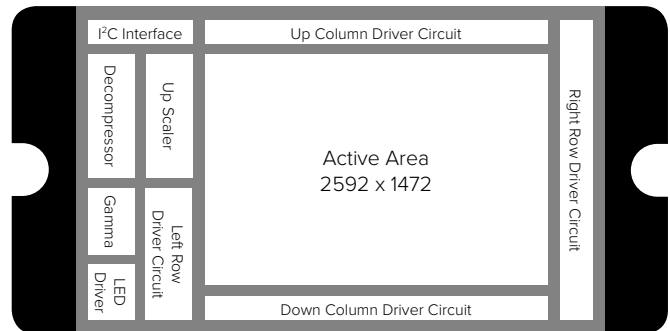


## **RDP360H**

Resolution: HD (1280 x 720)  
Active Area: 0.36"  
Dimension: 25.0 x 7.8 mm



## FUNCTIONAL BLOCK DIAGRAM



## FEATURES

- Single panel Liquid Crystal on Silicon (LCoS) with RDC200-Display Controller
- 0.7" active display diagonal
- High definition (2560x1440) array of 6.05  $\mu\text{m}$  mirrors
- High frame refresh rate (up to 360 Hz) for Field Sequential Color
- Gamma corrected 8-bit gray depth
- Low power consumption
- Embedded LED driver
- Embedded Temperature Sensor
- High speed LVDS interface: 8 channels x 1000 Mbps
- High reflectivity: over 82% (NFY)
- Contrast ratio: 500:1 (at FSC driving, NFY)
- Active area: 15.488 x 8.712 mm (QHD)
- Module size: 28.3 x 12 mm (NFY)
- Power consumption: 200 mW (NFY)
- Fast VA (Vertical Alignment) LC mode
- High voltage LCoS process
- RoHS compatible package

## GENERAL DESCRIPTION

The RDP700Q is a highly integrated LCoS display module for a single panel optical display system such as HMD (Head-Mounted Display), HUD (Head-Up Display), and Pico Projectors. It operates up to 360 Hz refresh rate. It includes RGB LED driver, low-voltage differential signal receiver and power-down detection circuit. The fast-speed differential signal receiver, which receives LVDS format, interfaces with fast-speed parallel digital signals (8 channels x 1000 Mbps) and controls signals for high frame rate of a panel. The LVDS interface enables RDP700Q to perform a long path connection and high frame rate display, allowing the panel to be applied to a single panel system such as HMD, HUD, and Pico Projectors. Gamma corrected resistor string and gamma tab voltages are fully programmable for enhanced gray scaling performance. The RGB LED driver supports RGB LEDs as a light source of applications.

## APPLICATIONS

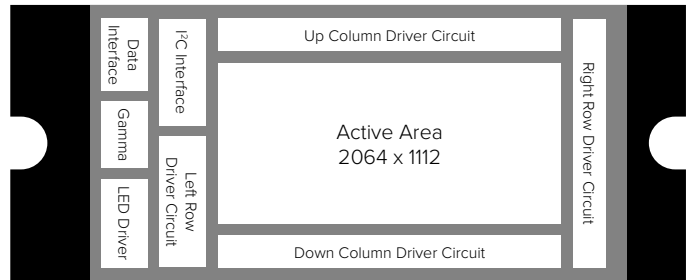
- Head-Mounted Display
- Head-Up Display
- Pico Projector
- AV Projector
- VR

## PRODUCT HIGHLIGHTS

1. Single-panel liquid crystal on silicon (LCoS) with RDC200 display controller
2. High frame rate for field sequential color of single panel optical system
3. Differential signal interface for long path
4. Embedded LED driver
5. Embedded temperature sensor
6. Low power consumption



## FUNCTIONAL BLOCK DIAGRAM



## FEATURES

- Single panel Liquid Crystal on Silicon (LCoS) with RDC200-Display Controller
- 0.55"/0.57" active display diagonal
- High definition (2064 x 1112) array of 6.3 μm mirrors
- High frame refresh rate (up to 420 Hz) for Field Sequential Color
- Gamma corrected 8-bit gray depth
- Low power consumption
- Embedded LED driver
- Embedded temperature sensor
- High speed LVDS interface: 8 channels x 1000 Mbps
- High reflectivity: over 82%
- Contrast ratio: 500:1 (at FSC driving)
- Active area: 12.096 x 6.804 mm (1080P)  
12.9024 x 6.4512 mm (2k1k)
- Module size: 25.8 x 10 mm
- Power consumption: 120 mW
- Fast VA (Vertical Alignment) LC mode
- High voltage LCoS process
- RoHS compatible package

## GENERAL DESCRIPTION

The RDP551F is a highly integrated LCoS display module for a single panel optical display system such as HMD (Head-Mounted Display), HUD (Head-Up Display), and Pico Projectors. It operates up to 420 Hz refresh rate. It includes RGB LED driver, low-voltage differential signal receiver and power-down detection circuit. The fast-speed differential signal receiver, which receives LVDS format, interfaces with fast-speed parallel digital signals (8 channels x 1000 Mbps) and controls signals for high frame rate of a panel. The LVDS interface enables RDP551F to perform a long path connection and high frame rate display, allowing the panel to be applied to a single panel system such as HMD, HUD, and Pico Projectors. Gamma corrected resistor string and gamma tab voltages are fully programmable for enhanced gray scaling performance. The RGB LED driver supports RGB LEDs as a light source of applications.

## APPLICATIONS

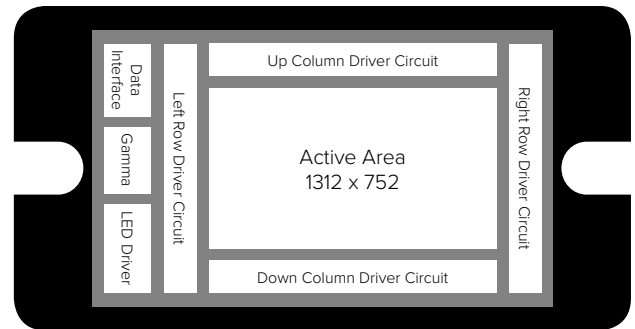
- Head-Mounted Display
- Head-Up Display
- Pico Projector
- AV Projector
- VR

## PRODUCT HIGHLIGHTS

1. Single-panel liquid crystal on silicon (LCoS) with RDC200 display controller
2. High frame rate for field sequential color of single panel optical system
3. Differential signal interface for long path
4. Embedded LED driver
5. Embedded temperature sensor
6. Low power consumption



## FUNCTIONAL BLOCK DIAGRAM



## FEATURES

- Single panel Liquid Crystal on Silicon (LCoS) with RDC100 (or RDC200)-Display Controller
- 0.5" active display diagonal
- High definition (720P, 1312 x 752) array of 8.6  $\mu\text{m}$  mirrors
- High frame refresh rate (up to 400Hz) for Field Sequential Color
- Gamma corrected 8-bit gray depth
- Low power consumption
- Embedded LED driver
- Embedded DC-DC converter
- High speed LVDS interface: 4 channels x 800 Mbps
- High reflectivity: over 82%
- Contrast ratio: 500:1 (at FSC driving)
- Active area: 11.2832 x 6.4672 mm
- Module size: 24.8 mm x 10.8 mm
- Power consumption: 150 mW
- Fast VA (Vertical Alignment) LC mode
- High voltage LCoS process
- RoHS compatible package

## GENERAL DESCRIPTION

The RDP502H is a highly integrated LCoS display module for single panel optical display system such as HMD (Head Mounted Display), HUD (Head-Up Display) and Pico Projector. It operates over 400 Hz refresh rate. It includes RGB LED driver, low voltage differential signal receiver and power-down detection circuit. The fast speed differential signal receiver, which receives LVDS format, interfaces fast speed parallel digital signals (4channel x 8bit) and controls signals for high frame rate of panel. The LVDS interface makes RDP502H be able to long path connection and high frame rate display, which enables panel to apply to single panel system such as HMD, HUD and Pico Projector.

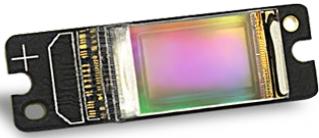
For enhanced gray scaling performance, gamma corrected Resistor string and gamma tab voltages are fully programmable. The RGB LED driver supports RGB LEDs as light source of applications.

## APPLICATIONS

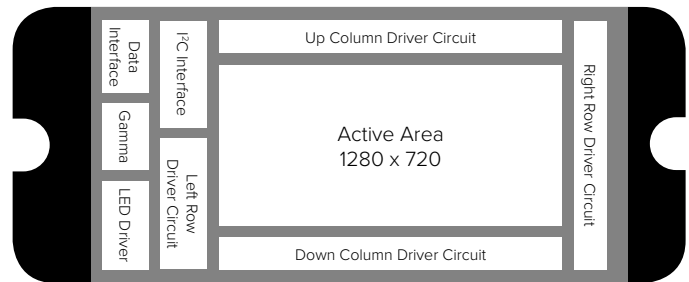
- Head-Mounted Display
- Head-Up Display
- Pico Projector
- AV Projector

## PRODUCT HIGHLIGHTS

1. High frame rate for Field Sequential Color of single panel optical system
2. Differential Signal interface for long path
3. Embedded LED Driver
4. Low power consumption



## FUNCTIONAL BLOCK DIAGRAM



## FEATURES

- Single panel Liquid Crystal on Silicon (LCoS) with RDC100 (or RDC200)-Display Controller
- 0.36" active display diagonal
- High definition (1280x720) array of 6.3  $\mu\text{m}$  mirrors
- High frame refresh rate (up to 420 Hz) for Field Sequential Color
- Gamma corrected 8-bit gray depth
- Low power consumption
- Embedded LED driver
- Embedded temperature sensor
- High speed LVDS interface: 4 channels x 900 Mbps
- High reflectivity: over 82%
- Contrast ratio: 500:1 (at FSC driving)
- Active area: 8.064 x 4.536 mm
- Module size: 25.0 x 7.75 mm
- Power consumption: 120 mW
- Fast VA (Vertical Alignment) LC mode
- High voltage LCoS process
- RoHS compatible package

## GENERAL DESCRIPTION

The RDP360H is a highly integrated LCoS display module for single panel optical display system such as HMD (Head Mounted Display), HUD (Head-Up Display) and Pico Projector. It operates over 360 Hz frame rate. It includes RGB LED driver, low voltage differential signal receiver and power-down detection circuit. The fast speed differential signal receiver, which receives LVDS format, interfaces fast speed parallel digital signals (4 channel x 900 MHz) and controls signals for high frame rate of panel. The LVDS interface makes RDP360H be able to long path connection and high frame rate display, which enables panel to apply to single panel system such as HMD, HUD and Pico Projector.

For enhanced gray scaling performance, gamma corrected Resistor string and gamma tab voltages are fully programmable. The RGB LED driver supports RGB LEDs as light source of applications.

## APPLICATIONS

- Head-Mounted Display
- Head-Up Display
- Pico Projector
- Smart Glass
- VR

## PRODUCT HIGHLIGHTS

1. High frame rate for Field Sequential Color of single panel optical system
2. Differential Signal interface for long path
3. Embedded LED Driver
4. Embedded Temperature Sensor
5. Low power consumption