

IVGA640C *AN INNOVATIVE COLOR FILTER LIQUID-CRYSTAL-ON-SILICON MICRODISPLAY*



GENERAL DESCRIPTION

The IVGA640C color filter liquid-crystal-on-silicon (CF-LCOS) microdisplay has 640x480xRGB spatial resolution for cost-effective wearable and projection display applications. IMD employs a proprietary color filter technique to render excellent color for the display with low fabrication cost and high alignment accuracy. The IVGA640C accepts 24-bit digital video data and includes an embedded timing controller for easy interface with common video decoders and computer. All digital inputs are 3.3V logic. The IVGA640C is available with an FPC package. Operation and storage temperature is wide and can be up to industrial standard.

SPECIAL FEATURES

- ◆ Proprietary color management scheme
- ◆ Proprietary microdisplay driving scheme
- ◆ All digital interface of 3.3V logic
- ◆ 24-bit digital video input (RGB888)
- ◆ Integrated data and scan drivers
- ◆ Embedded timing controller
- ◆ Low power consumption
- ◆ Wide operation temperature

APPLICATIONS

- Cost-effective wearable display
- Portable micro-projector

DISPLAY KITS

- ✓ 85Hz wearable display kit, **WD-640**
- ✓ 120Hz micro-projector kit, **PRO-640**

SPECIFICATIONS

Display type	Active matrix liquid-crystal-on-silicon (LCOS) microdisplay			
Display mode	Reflective normally white (NW) twisted nematic			
Resolution	640 H x 480 V x RGB; 15.0 μm x 15.0 μm pixel pitch			
Sub-pixel arrangement	10.0 μm x 7.5 μm sub-pixel pitch in delta arrangement			
Fill factor	89%			
Contrast ratio	200 (with F#2.0 optics)			
Color depth	24-bit digital video input in RGB888 format			
Color coordinates 45°C	Red	X=0.58, Y=0.30		
	Green	X=0.26, Y=0.53		
	Blue	X=0.17, Y=0.18		
Power consumption	50mW at 85Hz or 80mW at 120Hz			
Panel reflectance	Typically 20%			
Response time	<16ms (Ton + Toff)			
Maximum light flux	10M lux. (or 1100 lumen on the display area)			
Display area	9.60 mm H x 7.20 mm V (0.47" diagonal)			
Die size	14.10 mm H x 10.80 mm V			
Operation temperature	Commercial grade	0° to 55°C		Industrial grade
Storage temperature		-20° to 70°C		
				-20° to 65°C
				-40° to 80°C