

SM2-D1024-80

The new definition of a smart camera

Features

- 1024 x 1024 pixel resolution
- Global shutter
- Dynamic range up to 120 dB via LinLog®
- Up to 75 fps @ full resolution
- Multiple Regions of Interest (MROI)
- 12 bit greyscale
- Superior Signal-to-Noise Ratio (SNR)
- 10 to 8 bit Look-up Table (LUT)
- Built-in 1 GHz DSP
- 256 MB SDRAM
- 2 GB SD-Card
- CE, RoHS & WEEE compliant
- Built-in webserver for camera control



Application Examples

Machine vision

- Standard vision applications
- PCB inspection
- Laser triangulation
- Quality control
- OCR
- Form and completeness verification

Accessories

- Power & signal connector 12 pin Hirose (included in the shipment)
- See section Accessories in this booklet for further details. Lenses are not included.

SM2-D1024-80-GB-12

Image Sensor

Image sensor	Photonfocus A1024B (2. generation)
Technology	CMOS active pixel
Scanning system	Progressive scan
Optical format / diagonal	1" / 15.42 mm
Resolution	1024 x 1024 pixels
Pixel size	10.6 µm x 10.6 µm
Active optical area	10.9 mm x 10.9 mm
Random noise	< 0.5 DN RMS @ 8 bit / gain = 1
Fixed pattern noise (FPN)	< 1.0 DN RMS @ 8 bit / gain = 1 / offset correction on
Dark current	2 fA/pixel @ 30 °C
Full well capacity	200 ke ⁻
Spectral range	400 nm ... 900 nm
Responsivity	120 x 10 ³ DN / (µm ²) @ 610 nm / 8 bit / gain = 1 (approximately 350 DN / (lux s) @ 610 nm / 8 bit / gain = 1)
Optical fill factor	35 %
Dynamic range	Up to 120 dB with LinLog®
Colour format	Monochrome
Characteristic curve	Linear, LinLog®, Skimming
Shutter mode	Global shutter
Read out mode	Sequential read out or simultaneous read out (readout during exposure)

Camera

Exposure time	10 µs ... 0.83 s / 50 ns steps
Frame rate	75 fps
Pixel clock	40 MHz
Camera taps	2
Greyscale resolution	12 bit / 10 bit / 8 bit
Analogue gain	1
Trigger modes	• Free running (non triggered) • Trigger
Features	• Multiple Regions of Interest (MROI) • On-camera shading correction • Decimation in y direction • Look-up Table (LUT) • Image information • Enhanced trigger features • Skimming • LinLog® • Realtime clock
CPU	Texas Instruments TMS320 C6415 @ 1 GHz ; 8.000 MIPS
RAM	256 MB SDRAM
Storage	2 GB SD Card
I/O	• 3 opto-decoupled digital inputs and outputs • 3 RS422 inputs and outputs, • JTAG connector for DSP software development • RS232 interface
Interface	1 GBit-Ethernet TCP/IP, FTP SD Card
Operating temperature	0 °C ... +50 °C
Power supply	+12 V DC (+/-10 %) (12 pin Hirose connector)
Power consumption	8.0 W
Lens mount	C-Mount (CS-Mount optional)
Dimensions	60 x 60 x 135 mm ³
Mass	600 g
Conformity	CE / RoHS / WEEE
Special	Adjustable backfocus

Software

Camera control	Built-in webserver
DSP Development tool	TI code-composer