CMOS line scan sensors

HP-2301P / HP-1501P

Combining high frame rate with low noise, the100µm HP line scan sensors are targeted at dental, cephalography, security, NDT, industrial CT and automated optical inspection systems. Both HP-2301 P and HP-1501 P sensors use tiled sensor chip arrays to deliver a wide field of view, with per-column ADCs and parallel digital outputs providing the data rate necessary to achieve fast continuous video rates. Row windowing (ROI selection) allows readout of a reduced number of rows, with proportionately higher frame rate, up to 49kHz for 2 rows. Built around ISDI's patented rad-hard pixel technology, the HP series offers extended life in X -ray applications. Two gain modes offer a 8:1 sensitivity ratio, allowing optimum dynamic range over a wide combination of dose rate and frame frequency . These sensors are designed with fully digital control for easy integration with FPGAs , with programmable voltage references included in the module.

Key features

ISDI provides a full support package for rapid design-in

Camera board with USB3 and GigE Vision interfaces. This is designed to fit underneath the sensor module to create a compact, low-footprint detector module.

Reference design: PCB and firmware sources

Windows application software and SDK for image capture and sensor control

Full design support from ISDI applications engineering team

Specifications

	HP-2301P	HP-1501P
Active area (cm)	23.3 x 0.76	14.8 x 0.76
Resolution (h x v)	2331 x 76	1484 x 76
Frame rate max (fps)	480	480
Digital outputs	44 LVDS	28 LVDS
Package Dimensions (cm)	23.5 x 6.1	15.0 x 6.1
Power (max)	5.3W	3.4W

ISDI Ltd
Unit G2, Highgate Business Centre,
33 Greenwood Place
London NW5 1LB

+44 20 8037 0000
www.isdicmos.com

Copyright ©ISDI Ltd 2020

Specifications/packaging

HP-2301P / HP1501P

Pixel pitch	100µm
Chroma	Mono
Gain modes	Dual gain: high or low full well
Minimum ROI size	2 rows
Readout architecture	Rolling shutter
Temperature sensor on-chip	-40C° to +80C°, analogue output
QE*FF @ 550 nm	51%
Operating temperature	10 – 50°C
RoHS	Yes
Connector Type	Samtec QTH
Supply voltage	2.5V, 4.5V
Minimum exposure time (2 rows)	20µs
Package	Silicon wire-bonded to PCB, metal/metal substrate
Saturation in linear range HFW	3.0 Me-
Saturation in linear range LFW	365ke-
Dynamic range HFW	73.6dB
Dynamic range LFW	70.2dB

ISDI Ltd
Unit G2, Highgate Business Centre,
33 Greenwood Place
London NW5 1LB

+44 20 8037 0000
www.isdicmos.com

Copyright ©ISDI Ltd 2020