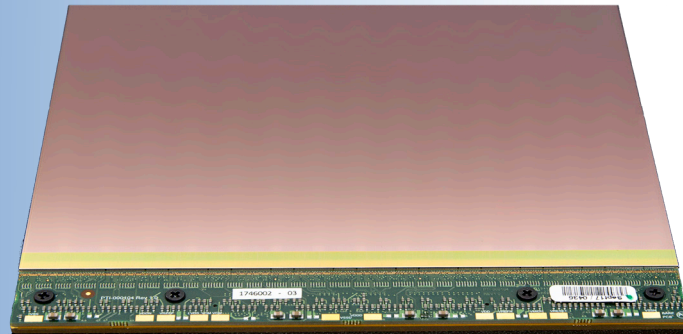


TY series 100 μ m pixel sensors

TY-1207 / TY-1412 / TY-1512 / TY-2222



Based around ISDI's patented pixel technology, the TY series is designed to match the demanding requirements of high-performance flat panel X-ray detectors. The 100 μ m pixel size is optimised for medical imaging applications where high dynamic range and high-speed read-out are essential. ISDI's unique radiation-hard pixel architecture ensures an extended working life in higher-energy X-ray applications. Per-column 16-bit ADCs and multiple serial data channels enable fast frame rates for real time imaging, up to 116 frames per second. Two gain modes allow the sensor to be optimised for either high sensitivity for fast frame rates, or high dynamic range for static imaging.

Region of interest (ROI) is programmable on the fly, for dynamic zoom and faster frame rates. The TY series sensors are supplied optionally with fibre optic plate (FOP) attached. ISDI provides a full support package for design-in, including evaluation kits and reference designs.

Key features

Specifications

	TY-1107	TY-1412	TY-1512	TY-2222
Radiation-hard pixel design				
Active area (cm)	11.1 x 7.2	14.0 x 12.0	14.5 x 11.1	22.2 x 21.7
Frame rate up to 116fps				
Resolution (h x v)	1110 x 721	1401 x 1200	1451 x 1110	222.1 x 2173
14-bit or 16-bit digital output				
Frame rate max (fps)	112	116	112	112
Programmable region of interest (ROI) for higher frame rates.				
Tile butting	3-side	3-side	3-side	-
Digital outputs (LVDS)	12	18	22	68
Dual gain (full well), run time selectable				
Power (Watts)	1.3	2.3	2.5	7.6

Specifications

TY-1207 / TY-1412 / TY-1511 / TY-2222



Pixel pitch	100µm
On chip ADC	14 bits or 16 bits configurable
Chroma	Mono
Gain modes	Dual gain: high or low full well
Row period in ROI mode	8.2 µs/row
Minimum ROI size	2 rows
Readout architecture	Rolling shutter
Temperature sensor on-chip	0C° to 80C, analogue output
QE @ 550 nm	53%
Operating temperature	10 – 50°C
RoHS	Yes
Connector Type	Samtec QTH-090
Supply voltage	3.3V and 3.5V
Power consumption	10W (IS-3131), 6.8W (IS-212), 1.7W (IS-1512, IS-1207)
Package	Silicon wire-bonded to PCB, ceramic substrate
Saturation in linear range HFW	3.2 Me-
Saturation in linear range LFW	360 ke-
Dynamic range HFW	81 dB
Dynamic range LFW	72.7 dB