



Blackbird SXGA

MWIR InSb detector, 1280 x 1024
10 μ m pitch, Digital ROIC

Defense Applications



General Description

BLACKBIRD SXGA is SCD state-of-the-art MWIR High Definition detector, which integrates SCD newest technology of InSb 10 μ m pixel.

This 1280x1024 FPA is based on SCD's mature InSb technology and includes a digital readout circuit implemented in advanced CMOS process. The FPA overall size is ~70% larger than SCD's PelicanD VGA, 15 μ m format detector. Nevertheless, it is packaged in the same PelicanD Dewar. The proximity electronic board supports Video Engine capabilities at low power consumption. This yields a very large format detector with outstanding image quality, high frame rate, and compact size.

Applications

- Persistent surveillance
- Long/medium range Surveillance & Targeting
- IRST
- MWS
- Thermography

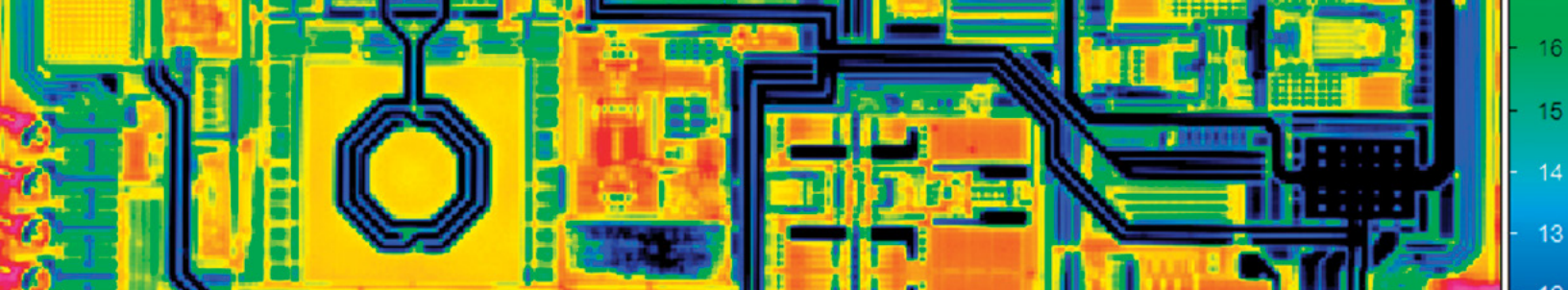
Main Features

- High sensitivity: Low readout noise, Low dark current, High Quantum Efficiency
- Range of gain possibilities
- High frame rate: up to 180 Hz in full frame
- Simple electronic interface – Keeps the legacy Camera link interface
- Option for 1280x720 Video Format
- Video Engine capabilities:
 - * (Features shall be released in several versions)
 - Non Uniformity Correction (NUC)
 - Bad-Pixel Replacement (BPR)
 - Dynamic Range Compression (DRC)
 - Auto Focus support (Q-Factor)
 - Zoom & Graphic support
 - Spatial & Temporal Noise reduction



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Typical Performance

Parameter	Value
Detector type	InSb 2D array
FPA spectral range	1÷5.4 μm
Format	1280x1024
Pitch	10 μm
Integration modes	ITR, IWR, others
Integration capacitors and their Floor Noise (FN) *	0.3Me- ; FN = 60e- 0.5Me- ; FN = 90e- (ITR mode only) 2.0Me- ; FN = 380e- 3.5Me- ; FN = 950e-
Maximum frame rate	180 Hz
Video output	Camera Link Digital output
Digital signal resolution	13 bit
Readout mode	Normal / 2x2 Binning
Readout direction	Bottom-up / Left-Right
Windowing	Flexible: at 4 row / column steps
NETD (2Me- Cap.)	< 25mK at 70% well fill capacity
Local Residual Non Uniformity	< 0.04% STD/DR at 10-80% well fill capacity
IDCA optical parameters **	F/3, spectral range: 3.6÷4.9 μm (defined by cold filter)
Cooler options	Rotary 0.5W cooler (standard) Others, optional per request
Dimensions	Weight – approx. 720 Gm Length (optical axis) – 140 mm

* ITR and IWR modes are possible unless otherwise noted. Floor noise is specified in IWR mode.
Floor noise in ITR mode expected to be equal or lower than IWR mode.

** Other optical configurations are possible.

Specification are subject to changes without further notice