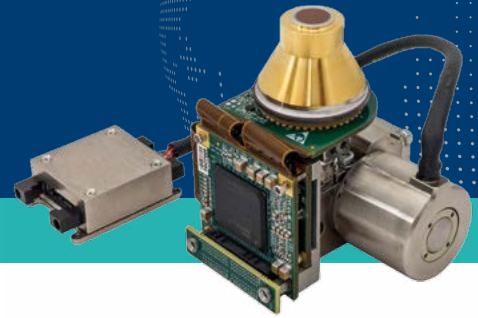




Mini Blackbird SXGA

Low SWaP-C HD MWIR Video Core, 1280 x 1024 SXGA Format, 10 μ m pixel pitch, HOT XBN sensing technology

Defense Applications



General Description

The Mini Blackbird SXGA is a state of the art HD MWIR core optimized for low SWaP-C applications. This breakthrough very Low SWaP-C core enables MWIR HD to meet the demanding requirements of tactical applications such as: small and tactical payloads, hand held and portable devices, tactical situation awareness systems and variety of armor sights requirements, The Mini-Blackbird integrates SCD's advanced pixel technology of XBN 10 μ m pixel size.

The 1280 x 1024 FPA is based on SCD's proven XBN technology which enables HOT (High Operating Temperature) FPA operation at 150K without compromising on the detectors overall performance. The HOT HD FPA is integrated into a very compact Dewar and operated using an advanced micro-cooler optimized for HOT detectors. In addition, the detectors proximity electronics include full video core with image processing capabilities on board providing a very compact solution, very low weight (<350 gr) and very low power consumption (total power is about 5W at room temperature).

Applications

- Light small tactical payloads for mini UAVs, Drones, Search & Rescue helicopters
- Ground Surveillance
- Persistent surveillance
- Long/Medium Range Surveillance & Targeting
- Hand Held systems
- Armored Sights

Detector Key Features

- HD Format: 1280 x 1024 at 10 μ m pitch
- HOT Sensing material - XBN technology (150K operating Temperature)
- Digital ROIC
- Compact and Ruggedized Dewar
- Low SWaP Stirling cooler
- High image quality
- Frame rate: Raw digital output at up to 90 Hz (full window size); Fully processed data at 60Hz
- Simple electrical interface using our legacy connector with camera link interface and a simple communication protocol

Integrated Video Processing Key Features

- Non Uniformity Correction (NUC)
- Bad-Pixel Replacement (BPR)
- Automatic Exposure / Gain Control (AGC)
- Dynamic Range Compression (DRC)
- Auto Focus support (Q-Factor)
- Digital Zoom
- Graphic overlay support
- Pseudo-color Look-Up-Tables
- Spatial & Temporal Noise Reduction

Note: Option for 1280x720 Video Format by windowing





Typical Performance

Parameter	Value
Detector type	HOT XN Array
FPA spectral range	3.6÷4.2 μm (1-4.2 μm available on request)
Format	1280x1024
Pitch	10 μm
Size	Length (optical axis) – 80 mm
Weight	Weight < 350gr
Power consumption (at 23C at 60Hz)	Cooler <2.5 W Proximity electronics <2.5W
Integration modes	ITR, IWR, others
Integration capacitors and their Floor Noise (FN) *	0.3Me- ; FN = 80e-
	0.5Me- ; FN = 120e- (ITR mode only)
	2.0Me- ; FN = 340e-ITR/500e- IWR
	3.5Me- ; FN = 1200e- (ITR mode only)
Maximum Frame Rate	90 Hz (full window, raw image)
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 2 row steps
NETD (2Me- Cap.)	< 25mK @ 70% well fill capacity
Local Residual Non Uniformity	< 0.04% STD/DR @ 10-80% well fill capacity
F Number	F/3.4, F/4 (Others per customer request)
Cooler Options	K580 / SX-020 / RM1S

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

Specifications are subject to changes without further notice