

Syrnatec Inc.

Product Catalog

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IMAGING SOLUTIONS

MSI IMAGER INFRARED

MSI: *Multispectral Imagers (TRL Status: TRL-4)*

The MSI is a Multispectral off-the-shelf Ultra low light color night vision imaging system. MSI features cutting edge wide spectrum focal plane array to support ultra-low light color imaging needs.

Specifications

- Imager: WSFPA Photodetector, 400nm to 1800nm, 8μm pixels, 2Kx2K pixel density
- Resolution: 1080p, 1080i
- Image enhancement: Antiblooming, Auto pixel correction, Anti reflective coating on FPA/ Solar/ intense source protection
- Video connectivity: HD-SDI
- Low light detectivity: 0.0001lx
- Gain: adjustable
- Color: Manual and auto adjust

FOCAL PLANE ARRAYS

- SWIR FPA
- NIR FPA
- MWIR FPA
- LWIR FPA

RADIATION HARDENED ROIC

ROIC is a 16 Readout Integrated IC with a 12-bit ADC working up to 20Mbps (3 to 20MSPs). Standard Device offers 16 LVDS output. Device is suitable to read raw data from CCD/ CMOS sensor. ROICs are designed for both Scanning and Staring application

ROICs are available for:

- Visual and Near IR
- LWIR
- Hyper Spectral*

Customized devices with following functional features can also be offered

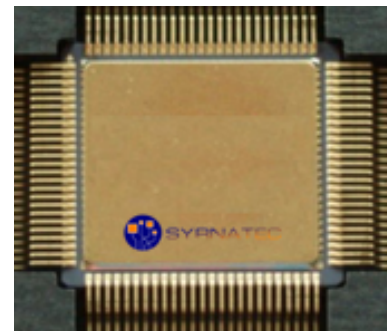
ADC: 14-bit ADC (up to 20MSPs)

No. of Channels: 4 to 16 channel options

*Hyperspectral imaging Sampling frequency: few KHz to 20MHz to support

Device is offered with:

- Package: **120 PGA and 100 CQFP**



Electrical Specification

- Input voltage: 3.3V
- Digital Core voltage: 2.5V
- Analog I/O: 3.3V
- Power Consumption: < 70mW/ Channel@20MSPs

Environmental Specification

- Operating Temperature: -55 to +125degC
- TID: upto 300Krad (Si)
- SEL immune (LETTH): > 64MeV/mg/cm2
- SEU Immune (LETTH): > 40MeV/mg/cm2

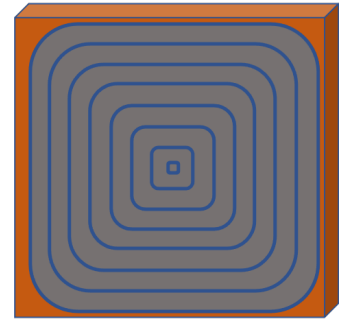
DETECTORS AND SENSORS

SILICON DRIFT DETECTOR

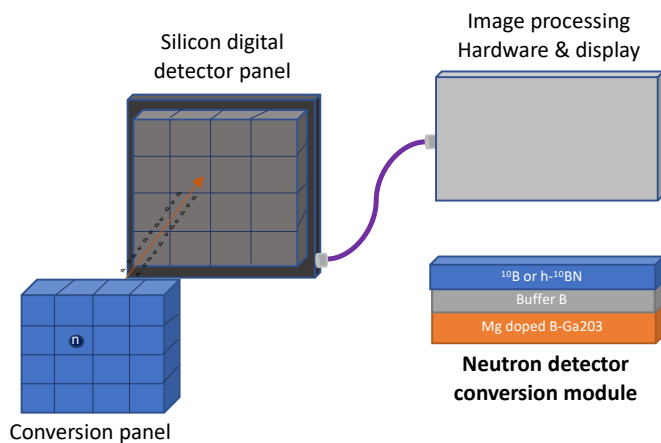
Syrnatec X-DD is a large area silicon drift detectors of 1cm^3 , under development for measurement of Medium energy X-Rays. Detectors consist of a fully depleted, high resistivity silicon active area. Incident X-rays will be determined by monitoring the magnitude of the voltage step after each pulse that is incident on X-DD.

The detector and read out electronics are currently under development. Product is expected to reach TRL-3 by Q4-2021.

Syrnatec intends to develop these detectors as single detector and integrated FPAs for applications covering NDT, medical imaging, High-energy physics, Electron Microscopy, Spectroscopy.



NEUTRON DETECTOR



High performance thermal solid-state neutron detector panel is designed to operate from 1 MeV to 8 MeV with neutron density $10\text{ neutron/cm}^2\text{/sec}$.

A unique structure is built on a Ga_2O_3 substrate coated with $\text{H-}^{10}\text{BN}$.

It has High Spatial Resolution of 0.5 mm or better Signal to Noise Ratio (SNR): >12 , Gamma Sensitivity: $>10^{-6}$. Syrnatec intend to develop a neutron detector for covering applications such as Critical Aerospace NDT techniques in turbines and other vital assemblies, Inspection of Material Science, Munition Detection.

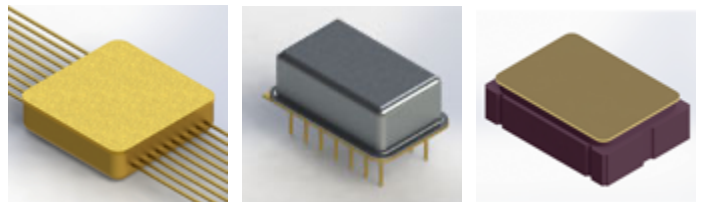
INTEGRATED CIRCUITS

CRYSTAL OSCILLATOR

- Hi precision crystal oscillator
- Frequency range: 10KHz to 250MHz
- Available in Industrial, MIL and Class S Radiation hardened version

Package option:

- SMT (5x7, 7x9, Flatpack)
- Thru hole (5x7, 7x9, DIL)




Electrical Specification



- Input Voltage: 3.3V/ 5V


Environmental Specification


- Operating Temperature: -55 to $+125^\circ\text{C}$
- TID: up to 100Krad (Si)



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