Advanced Computational Image Processing Software

PRISM™ ISP

Prism ISP is a collection of image signal processing (ISP) software libraries that include super-resolution, electronic image stabilization, image fusion, turbulence mitigation, noise reduction, and more. Compiled to run on low-power embedded processors from Qualcomm and NVIDIA, enabling developers to bring computational imaging to the edge while improving performance, lowering development costs, and shortening time to market.

Prism ISP is compatible with Teledyne FLIR market-leading thermal cores including Boson®, Tau® 2, Hadron™, and Neutrino®. The ISP libraries enable integrators to leverage high-performance ISP algorithms that dramatically enhance the viewed image quality and AI capabilities of world-class infrared camera modules for defense, industrial, and commercial applications.

INDUSTRY-LEADING THERMAL PERFORMANCE

High-value image quality enhancements improve operator viewing and perception software pre-processing

- Super-resolution resolves detailed features and produces a high-quality image
- Radiometric-JPGs unlock Teledyne FLIR's ecosystem, including FLIR Thermal Studio™
- Patented Teledyne FLIR MSX® enhances thermal images with visible edge details
- De-scintillation mitigates turbulence in long-range imaging

LEVERAGE ALGORITHM ECOSYSTEM TO SHORTEN TIME TO MARKET

Flexible software library lowers investment for integrating thermal-camera-computational imaging

- Compatible with Teledyne FLIR ADK, Boson, Tau 2, Hadron, and Neutrino
- Supports the latest embedded processors from NVIDIA and Qualcomm

BUILT FOR DEVELOPERS WITH THE TELEDYNE FLIR BRAND PROMISE

Trusted global leader in thermal infrared sensing and solutions

- Sample C++ reference application with libraries and documentation
- Expert technical services available to support integration
- Supports Linux and Windows (by request)

For more Information visit:
www.flir.com/prism

www.teledyneflir.com

SOFTWARE FEATURES

Authentication	Camera to ECU key handshake with 256-bit challenge/response
Cross Modality Image Registration	Automatic alignment of thermal and EO to compensate for parallax and time sync differences
Deblurring	Blind and semi blind (motion known) methods supported to restore MTF (thermal video)
Dewarping	Radial and tangential lens dewarping
Haze Penetration	Locally adaptive compesnation for atmosperic dispertion (thermal)
Motion Compensated Temporal Noise Reduction	Advanced, mutiframe noise reduction (thermal video)
Pseudo-Color	Multiple color pallets available (thermal video)
Rectification	Visible & thermal camera calibration process with pixel-accurate registration of visible & thermal
Scene Based Non-Uniformity Correction	Fixed pattern nosie removal (thermal video)
Super Resolution	Multiframe SR on full image or crop (e-zoom), 2X, 3X and 4X modes supported
Supported Hardware	Qualcomm: Snapdragon 8 gen 1 (RB5/QRB5165) & Snapdragon 8 gen 2 (QCS8550); NVIDIA: Jetson Xavier & Jetson Orin; Other Qualcomm and NVIDA HW on request
Supported Operating Systems	Linux (18.04 and 20.04) verification done on Ubuntu distribution(s). Windows by request.
Tone Mapping	Global and locally adaptive methods supported, optimized for highly dynamic scenes
Turbulance Mitigation (de-scintillation)	Reduced video distortion from turbulent air and compensate for MTF loss (thermal and EO)
Supported Video Formats	16b monochrome for LWIR/MWIR, 24b RGB/BGR for visible
Video Fusion	MSX and Color Night Vision fusion modes supported
Video Stabilization	Removal of high temporal frequency jitter (thermal and EO)

Specifications are subject to change without notice.
For the most up-to-date specs, go to www.flir.com/prism