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BLACKFIN LOW POWER IMAGING PLATFORM (BLIP)

A Revolutionary Advanced Occupancy Sensing Solution

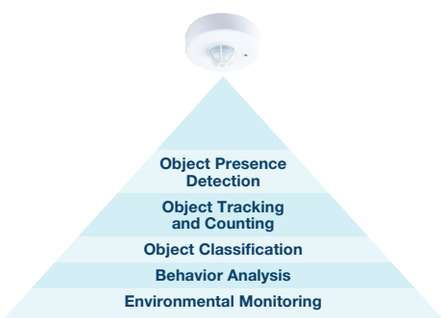
Overview

Analog Devices has developed a low cost, low power embedded computer vision platform targeting a vast array of real-time sensing applications. The Blackfin® Low Power Imaging Platform (BLIP) leverages the latest entry within the industry-leading, low power Blackfin processor family as well as Analog Devices' optimized software library deliverables. This solution offers end equipment manufacturers an out of the box form factor development platform with multiple functional profiles covering intelligent motion sensing, people counting, vehicle detection, and face detection deployable in both indoor and outdoor use cases. The BLIP system includes an intuitive configuration GUI and enables real-time analysis of captured video, as well as video output/display through an on-board USB port, making it a highly valuable tool for product development. Additionally, the associated documentation package is well positioned to help customers accelerate their time to market.

Target Applications Include:

- Indoor/outdoor lighting control
- HVAC system control
- Access control systems
- Parking guidance systems
- Presence monitoring systems
- In-vehicle occupancy detection
- Logistics/retail analytics

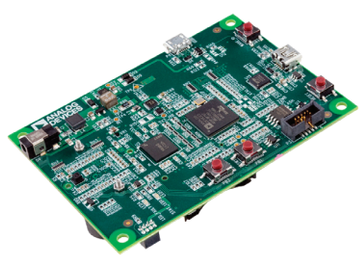
BLIP Deployment Model



ADI and our partners can facilitate an application specific/custom BLIP implementation.

BLIP Appearance

Top view.



Bottom view.

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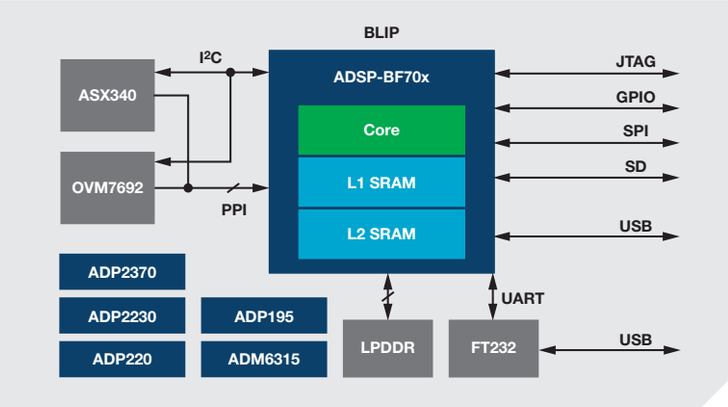
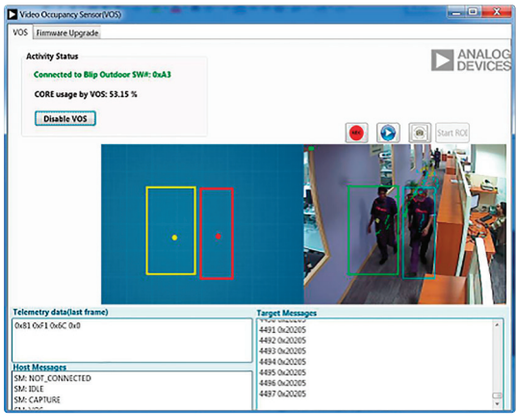
BLIP Block Diagram



System GUI



Video Occupancy Sensor Module

The Analog Devices BLIP hardware platform is covered with a preloaded occupancy software module that has been optimized to detect the presence and behavior of humans or vehicles within indoor and outdoor environments. This advanced detection operation provides significantly improved performance compared to single pixel PIR sensor solutions, meeting lighting control, climate control, and access control applications.

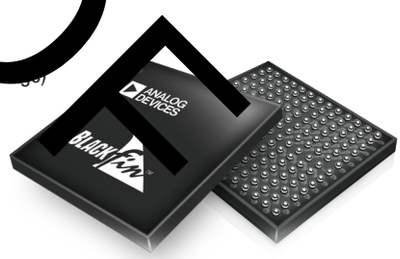
Blackfin Image Processing Toolbox

The Analog Devices video occupancy sensor software module and many other image analysis module deliverables are based upon the Blackfin image processing toolbox. This toolbox is a set of image processing primitives designed to enable faster development of complex image or video processing solutions for use on Blackfin processors. These primitive functions have been highly optimized to achieve the most efficient results possible on the Blackfin ADSP-BF5xx, ADSP-BF60x, and ADSP-BF70x families of devices. This toolbox library is MISRA-C compliant and also includes C reference code for the primitives and wrapper code layers for OpenCV like APIs.

Blackfin Low Power Imaging Platform Specifications and Details

Major Active System Components

- Processor: ADSP-BF707BBCZ-4
- Imagers: OVM7692 (VGA SoC sensor with integrated lens—64° FOV up to 3 meter range)
  ASX-340 (VGA sensor with external optics can achieve wide angle FOV with up to 10 meters range)
- Memory: MT46H128M16LFB7 (256 MB)
- Flash: W25Q32 (32 MB)
- Power management: ADP2370, ADP2230, ADP220, ADP195, ADM6315
- Interface: FT232RQ



Specifications

- Power consumption: <1 W
- Supply voltage: 3.2 V to 15 V
- Form factor: 2.5" × 3.5"

Board Support Package

- Development tool chain: CrossCore® Embedded Studio™
- Application software: VOS 3.2.0 (indoor/outdoor)
- Documentation: user guide, PCB schematics

CrossCore®
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