

# BlackEye Series

Stand-alone Vision System

BlackEye  
BlackEye-Lite  
BlackEye-Pro



## Key Features

- General purpose, cost-effective, compact vision system
- Supports both Korean and English user interface
- Mouse-driven menu style programming
- 640 x 480, 256-level grayscale image
- 4 NTSC/PAL camera inputs
- 2 MB flash memory for data storage
- Accepts video signal from CCD cameras, VCRs, TVs, and camcorders
- Parallel I/O to interface with external devices such as PLCs, sensors, switches, etc.
- Serial I/O communication with PCs and PLCs



# BlackEye

## Stand-alone Vision System

BlackEye is a line of general-purpose stand-alone vision platforms. Its compact and modular design with variety of imaging functions provides cost-effective solution to many vision applications. Developers can configure the system according to their vision requirement by choosing from BlackEye modules that consist of Vision controller, Lighting controller, and Parallel I/O.

### Vision Controller

BlackEye is designed around the Texas Instrument 32bit DSP with 60 MIPS of processing power (120 MFLOPS for BlackEye Pro). It provides 2 MB of programming memory and 2 MB of flash memory for storing both data and files.

### Modularity

BlackEye integrates 5 different modules. They are Vision controller, Vision controller power, Parallel I/O, Lighting controller, Lighting controller power. Users can configure the system according to their system requirement by choosing among 5 modules. The system can be configured with as small as 2 modules up to 7 modules.

### Image Processing

The standard BlackEye image is 640 columns by 480 rows of size with 256 grayscale levels. Maximum 4 NTSC/PAL cameras can be connected to the system. Two-bank image memory architecture enables BlackEye to perform both grabbing and processing images simultaneously.

### GUI & System Management

BlackEye's mouse-driven user interface is easy to use and it shortens the learning cycle. BlackEye also provides a variety of system management utilities that include a file manager. This file manager handles saving and manipulating user data and files in the flash memory.

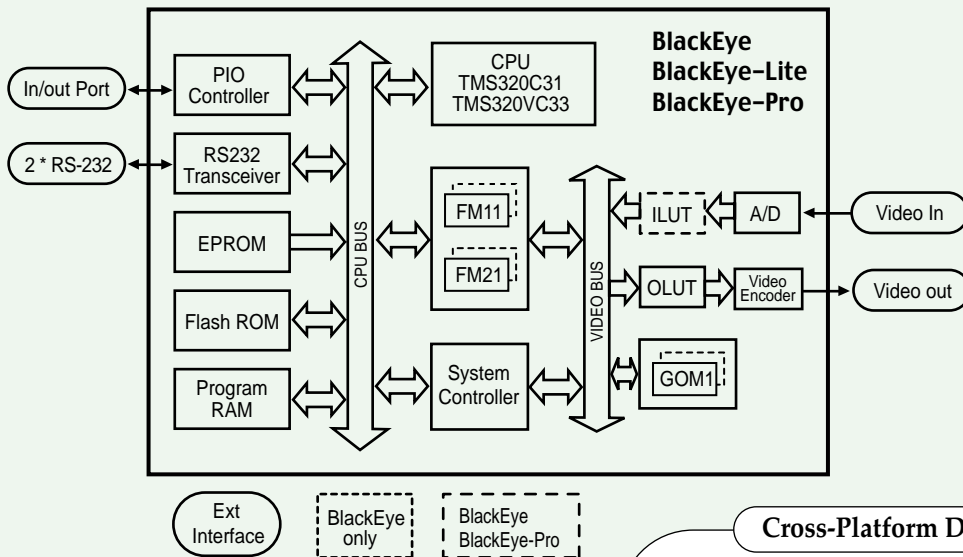
### External Interface

BlackEye interfaces with external devices such as PCs, PLCs, sensors, switches, relays, and even separate BlackEyes through its Parallel I/O port. It provides 4/8 output ports and 2/4/8 input ports. BlackEye also has one serial RS-232C port to communicate with external systems.

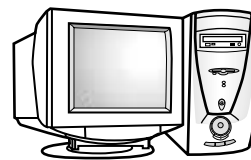
## Specifications

		BlackEye	BlackEye - Lite	BlackEye - Pro
Processing		20MIPS, 40MFLOPS		60MIPS, 120MFLOPS
Memory	Program	512KB for processing		
	Image	5 frame	2 frame	
	storage	2MB non-volatile flash		
Image	Acquisition	RS-170		RS-170, progressive scan
	Connection	max 4 cameras		
	Image	640 x 480, 256 gray levels (8bits per pixel)		
	LUT	5 programmable	none	2 selectable
Communication	PIO	8in, 8out	2in, 4out	4in, 8out
	Serial	RS - 232C 1port		
Display		NTSC		
User interface		Mouse		
Dimensions	Control Module	43mm x 105mm x 88mm		

## BlackEye Block Diagram



### Cross-Platform Development



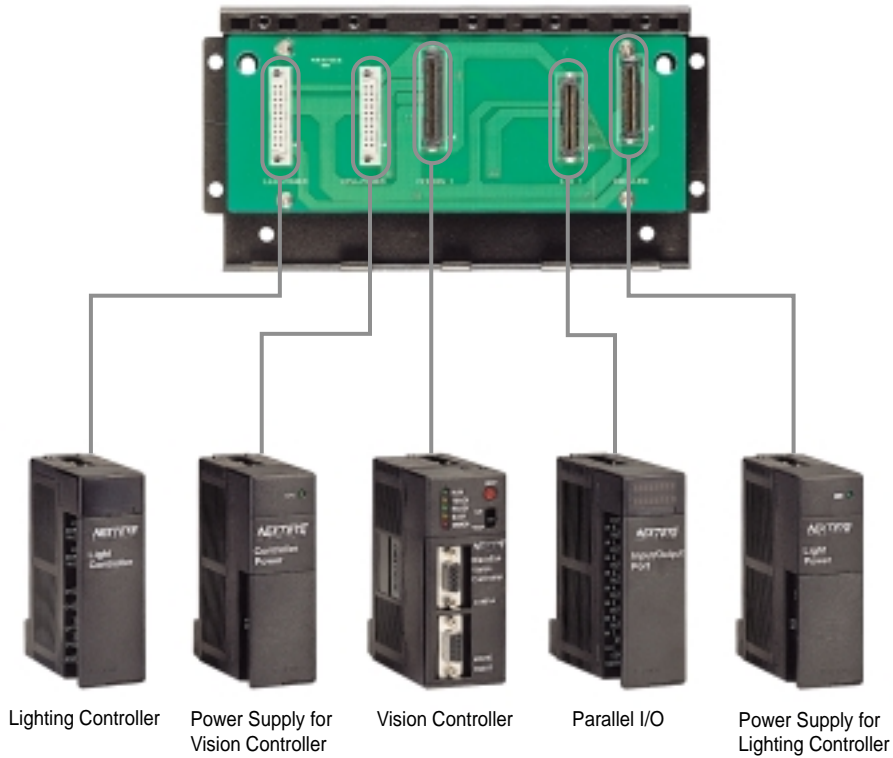
1. Develop your application with TI's compiler and our library on your pc.

2. Download the application to BlackEye using the serial port.



3. Execute the application on BlackEye.

## BlackEye's Modular Configuration



### Modules

NO	Module	Code
1	Lighting Controller Power	BELP
2	Vision Controller Power	BECP
3	Vision Controller	BEVC
4	Parallel Input/Output	BEIO
5	Lighting Controller	BELC
6	Backplane	BEBP

Controller Type	Vision Controller
BEF	BlackEye
BEL	BlackEye - Lite
BEP	BlackEye - Pro

### Ordering Information

Package Type	Module						
	BEVC1	BEVC2	BEIO1	BEIO2	BELC	BECP	BELP
L1S1	○					○	
L1S2	○		○			○	
L1S4	○		○		○	○	○
L1S5	○	○	○	○	○	○	○

NEP-BEF-L1S4

