



# FlashBus<sup>®</sup> Spectrim

## Multipurpose bus-mastering frame grabber for OEM applications

Integral Technologies introduces FlashBus Spectrim, a bus-mastering video frame grabber designed with OEM requirements in mind. FlashBus Spectrim utilizes the **Philips TriMedia™ video processor** and 16 MB SDRAM frame buffer to give it the flexibility needed for stringent applications. With multiple composite, S-Video, and component video inputs, video output, and high-quality video capture, FlashBus Spectrim is a perfect general purpose frame grabber.

### Key Features



- Bus-mastering video acquisition
- Philips TriMedia™ Video Processor
- Real-time transfer of video to system or display memory
- 16 MB SDRAM Frame Buffer
- High-quality video scaling to arbitrarily sized windows
- Up to 4 RGB or YCbCr, 8 S-Video, and 16 composite multiplexed video inputs
- RGB, YCbCr, S-Video, and composite video output
- CCIR capture resolution
- NTSC and PAL video formats
- Area of interest transfers to/from system and on-board memory
- Fast video input switching capability
- On-board microcontroller
- General purpose I/O triggers
- Optically isolated trigger output for flash control
- Programmable DAC output
- RS-232 output support
- Camera integration support
- 12 volt DC switched output for camera supply
- Real-time image flip, rotate, and mirror
- Windows 98, ME, NT 4.0, 2000, and XP drivers
- Windows-based FBG video capture application
- Optional SDK with sample applications
- Compatible with IVL Vision Library

### Applications

- Image analysis
- Scientific imaging
- Microscopy
- Law enforcement
- Video surveillance
- Traffic control
- Medical imaging



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## Bus-Mastering Performance

FlashBus Spectrim's high speed bus-mastering capability delivers real-time video data to system or display memory, without intervention from the host CPU.

## TriMedia Video Processor

By incorporating a Philips TriMedia VLIW (very long instruction word) processor, FlashBus Spectrim allows for maximum flexibility in handling challenging application requirements. Equipped with a 16 MB SDRAM frame buffer, the TriMedia video processor provides smooth interpolated scaling, hardware overlay, real-time video rotation, and video output functionality.

## High-Quality Video Capture

FlashBus Spectrim provides high-quality capture from up to 4 RGB or YCrCb component, 8 S-Video, or 16 composite/monochrome video sources in NTSC or PAL format. Video is captured and stored in CCIR-601 resolution, and can be scaled to any arbitrary size. Fast switching of up to 20 images per second between camera inputs is also possible for surveillance applications.

## Video Output

FlashBus Spectrim also supplies RGB or YCrCb component, S-Video, or composite video outputs in NTSC or PAL format. Video output source data is acquired from on-board memory, making it completely independent of the video input. This allows for video output not only from the currently viewed input video, but also from off-screen system memory. Graphics overlay can be added to the video image before going to the video output.

## Extensive Camera Control

FlashBus Spectrim was designed for easy camera integration and control. Power the camera from the fused and switchable 12 volt power supply, control camera operation by the RS-232 interface, or use the general purpose input or output triggers to control specific camera functions such as exposure control, all through a single cable from Spectrim's DB-25 connector. FlashBus Spectrim also incorporates an on-board microprocessor to guarantee accurate synchronization and robust triggering without relying on the host CPU.

## Software Developers Kit

As with all Integral Technologies frame grabber products, a comprehensive software developers kit is available that provides access to the features of the FlashBus Spectrim hardware. The SDK includes DLLs for Microsoft Windows 9x, ME, NT 4.0, 2000, and XP operating systems. Source code samples are included in both Visual C and Visual BASIC to provide insight to various hardware functions of FlashBus Spectrim. Samples include video-in-a-window, overlay, video buffering, camera control, and more. As always, Integral Technologies provides free technical support to developers using the FlashBus Spectrim SDK.

## Integral Technologies Imaging and Vision Library



Integral Technologies IVL is a high-level programming library that provides an extensive set of optimized high-performance image processing and analysis functions in a conventional C-callable interface. IVL is compatible

with all Integral Technologies FlashBus® and FlashPoint® frame grabbers for Windows 9x, ME, NT 4.0, 2000, and XP operating systems.

## Specifications

### Video Inputs

- 4 RGB or YCrCb component inputs
- 8 S-Video color inputs
- 16 composite or monochrome inputs
- 25-pin input connector
- Video expansion header

### Video Digitization

- NTSC M, NTSC N, NTSC 4.43, NTSC-Japan, SECAM, PAL BGDHI, PAL N, and PAL M format support
- ITU-601 digitization
- Software programmable control of offset, gain, hue, and saturation
- EEPROM for storing configuration and calibration settings

### Video Acquisition

- Philips TriMedia video processor
- Smooth interpolated scaling to randomly sized windows
- Bus-mastering video transfers to system or display memory
- Hardware overlay of graphics over video
- RGB 32/24/16/15/8 and YUV 4:2:2 pixel formats
- Area of interest transfers to and from on-board and system memory
- 16 MB SDRAM frame buffer
- Fast image switching of camera inputs up to 20 images/sec
- Real-time image flip, mirror, or rotate

### Video Output

- Composite, S-Video, and component video output
- Output video can be from video input with overlay, or system memory

### I/O Control

- Optically isolated output trigger for flash interface
- 1 general purpose input trigger
- 2 general purpose output triggers

### External Control

- On-board microcontroller
- RS-232 control
- Camera exposure control
- Programmable DAC output (0V-10V)
- 12-volt DC output for camera power supply (fused at 1 amp)

### Software Developers Kit

- Windows 98, ME, NT 4.0, 2000, and XP DLLs
- DirectDraw support
- Visual Basic support
- TWAIN support
- Sample applications with source code
- Windows-based FBG capture application

### Video Cables

- Composite, S-Video, and component input and output cables available
- Custom cables and connector pinouts available upon request