

Features

- 64-bit graphics accelerator
- 1 or 2 MB display memory
- Supports VGA displays, TFT flat panel displays and broadcast-style video monitors
- Real-time video playback
- NTSC, PAL or SECAM video capture from composite or S-Video sources.
- Front or rear-panel I/O

The RG-101

Rastergraf's RG-101 is a display controller and video capture PMC card. It provides video output for VGA displays, TFT flat panel displays and broadcast-style video monitors together with real-time video playback and NTSC, PAL or SECAM video capture from composite or S-Video sources. Acquired live video input can be displayed in a window in the output display.

XVGA Graphics

The RG-101's 64-bit graphics engine provides many hardware-supported graphics operations such as rectangle fills and BitBLTs, as well as a hardware cursor. It supports a digital display interface for TFT flat panel displays, an analog RGB display interface (VGA monitors) and a TV output interface (NTSC/PAL video monitors). Both digital and analog interfaces may be used simultaneously, enabling output to two different display types at the same time. Sync-On-Green is software selectable.

Video Input

The RG-101 can process NTSC/PAL/SECAM video input signals and play back the video image in a window in the output display. Video images may also be captured and uploaded by the host processor for archiving or further image processing.

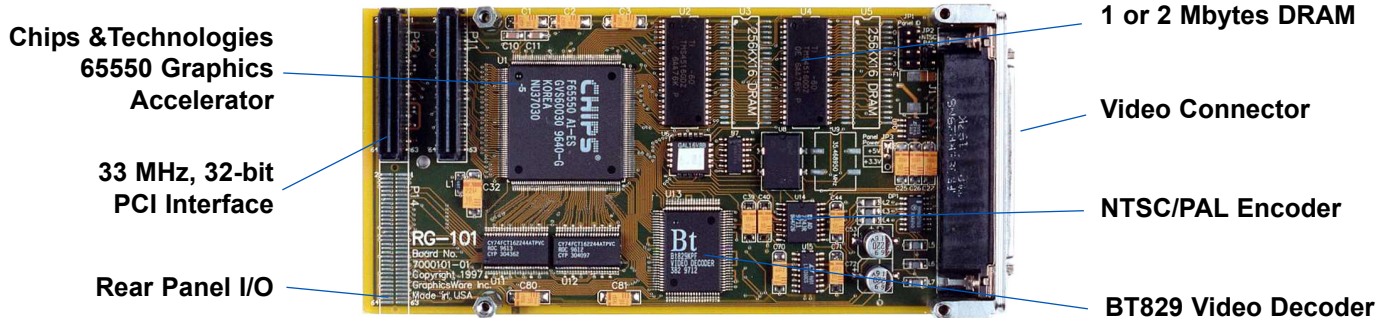
Both composite and S-Video signals are supported for both input and output video. Format selection for video input and output is completely independent, allowing video input to be processed in one format and displayed in another. For instance, the RG-101 could be used as a scan-converter, translating NTSC format video input into PAL format video output, or vice-versa.

I/O Connections

The RG-101 supports front panel I/O with optional rear panel I/O capability.

PMC Form Factor

The PCI Mezzanine Card (PMC) implementation provides a modular graphics solution for VMEbus and other platforms that support the PMC specification.



RG-101 Features

- 64-bit graphics accelerator
- 1 or 2 MB display memory
- 33 MHz, 32-bit PCI interface
- 8- or 16-bits per pixel (256 or 65535 colors)
- 1152 x 900 max. display resolution
- Support for 9-24 bpp TFT Flat Panel displays
- Hardware bit-mapped cursor
- Dual-display support: digital display and RGB analog or digital and NTSC/PAL
- Standard Drawing Library (SDL)
- VxWorks drivers
- NTSC, PAL or SECAM video capture
- Live video display or single-frame capture

Video Capture

The RG-101 provides Video Capture and Playback Support. It delivers live video display or single-frame capture. Video may be displayed full-screen or in a window with or without graphics overlay. A video window may be of arbitrary size and location (any pixel boundary). It supports the NTSC/PAL/SECAM video input formats. Signal interfaces supported include Composite and S-Video (Y/C) signal interfaces.

Additional video capture and playback features include:

- Independent video capture and display subsystems
- Arbitrary XY scaling on video input stream from video decoder to capture buffer
- Up to 8x zoom scaling on video output stream from capture buffer to display
- YUV capture data may be read directly from capture buffer by host

SDL Overview

The Standard Drawing Library, SDL, is a scaleable C graphics library designed for use with real-time and non-real-time operating systems. SDL is small, compact, ROMable, and offers device independent graphics functions for board level and embedded systems applications.

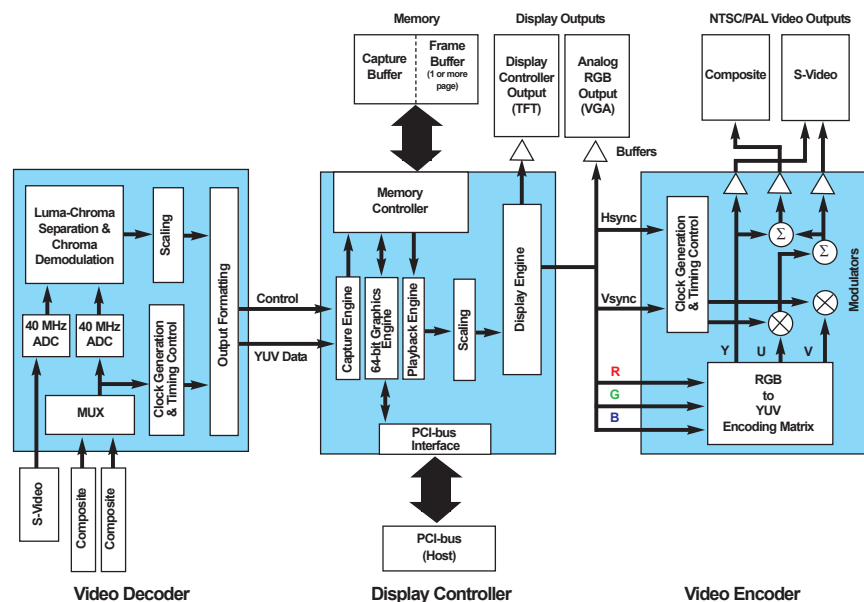
SDL is written in ANSI C and is supplied in library format, which means that its target code size can be controlled by limiting the number of functions used in a given application. SDL has been designed to run on any CPU and operating system that uses linear addressing and that is supported by an ANSI C compiler and linker.

SDL is easy to use and provides a complete set of graphics primitives. These graphics primitives can be extended by adding utility functions for specialized graphics tasks.

SDL Feature Summary

- Written in ANSI C
- Full Featured and Easy to Use
- Scaleable, ROMable, and Minimal RAM usage
- Solid (thin and wide) and Dashed Lines and Rectangles
- Circles, Ellipses, and Arcs
- Filled Circles, Chords, Sectors, and Polygons
- Solid and Pattern Fills
- Pixel Processing
- Proportional and Fixed Width Fonts
- Clipping Rectangle and Logical Origin
- Screen to Screen and Host to Screen Image Copy
- Mouse and Keyboard Support
- Video Capture Extensions

RG-101 Diagram



RG-101 Product Specifications

Graphics Controller	Chips & Technology 65550
Horizontal Scan Rates	31.5 to 115 KHz
Memory Configuration	1MB or 2MB DRAM
Video Connector	HD-68
Analog Monitor Support	Multi-frequency (VGA type) monitors. Sync-On-Green is software selectable. Digital: TTL-compatible
Flat Panel Support	Direct interface to SS, DD, STN and TFT panels.
Display Color	65,536 @ 16-bits 256 @ 8-bits
Multiple Display Support	Multiple RG-101 boards may be added to a single system.
Software Support	Standard Drawing Library (SDL) for VxWorks
Environment	
Operating temperature	0°C to +70°C
Storage temperature	-40°C to +120°C
Altitude	7,500 Feet
Humidity	5% - 95% non-condensing
MTBF	361K hours using Bellcore model (ground benign).
Power Requirements	+ 5V ±5% 1.5 A (Max. @ 5V with TFT Active)
Dimensions	Single-wide PMC

Display Resolutions

Resolution		Bits	Colors	Frequency
640 x 480	VGA	8/16	256/ 65,536	60 Hz 75 Hz
800 x 600	SVGA	8/16	256/ 65,536	60 Hz 75 Hz
1024 x 768	UVGA	8	256	60 Hz 75 Hz
1152 x 900	Sun	8	256	60 Hz 75 Hz

Ordering Information

Standard Configurations:

RG-101

1MB DRAM, flat panel display output, analog video output, NTSC Video input and NTSC Video output.

Options:

/2MB 2MB DRAM (replaces /1 MB).

/PAL PAL video input and output

Transition Cable Assembly:

3-1000 68-pin front-panel connector.

Software:

SDL/R3.6

Standard Drawing Library (SDL): C-callable graphics library for VxWorks.

Note: Version number may change as enhancements and improvements occur.

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