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SENSORAY CO., INC.

PCI Frame Grabber

Model 611 (Rev.D)

July 2001

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Limited warranty

Sensoray Company, Incorporated (Sensoray) warrants the hardware to be free from defects in material and workmanship and perform to applicable published Sensoray specifications for two years from the date of shipment to purchaser. Sensoray will, at its option, repair or replace equipment that proves to be defective during the warranty period. This warranty includes parts and labor.

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Special handling instructions

The circuit board contains CMOS circuitry that is sensitive to Electrostatic Discharge (ESD).

Special care should be taken in handling, transporting, and installing circuit board to prevent ESD damage to the board. In particular:

- Do not remove the circuit board from its protective anti-static bag until you are ready to install the board into the enclosure.
- Handle the circuit board only at grounded, ESD protected stations.
- Remove power from the equipment before installing or removing the circuit board.

Introduction

The 611 PCI frame grabber allows the capture of monochrome and color images from a variety of analog video sources into computer memory (RAM). The 611 is designed to work with standard TV signal sources, compatible to the following video standards:

- color: NTSC-M, NTSC-Japan, PAL-B, PAL-D, PAL-G, PAL-H, PAL-I, PAL-M, PAL-N, SECAM;
- monochrome: CCIR, RS-170.

The 611 digitally locks to the incoming video signals providing a stable output regardless of the signal source. The input's 4:1 multiplexer allows the selection between four composite or three composite and one Y/C (S-Video) analog video inputs, which makes it possible to connect up to four video sources to the frame grabber. The signal components (luminance and chrominance) are digitized with two separate 8-bit A/D converters. Low-pass filtering and double over-sampling of the input signal provide precise digitization with no aliasing artifacts. The digital signal is then scaled and/or cropped to the desired dimensions, if necessary. The scaled image is transferred to the host RAM using the PCI bus mastering mode, which requires minimum CPU attention. An on-board FIFO provides necessary buffering, minimizing the probability of image loss.

An 8-bit general purpose I/O port allows interfacing of the 611 to external hardware, which could be used, for example, for triggered image acquisition.

System Requirements

The 611 is designed to work with 32-bit, 33 MHz, 5 V PCI bus. An important system requirement is fast PCI-to-DRAM transfer. Some systems may not provide bandwidth sufficient for image transfer, which may result in image corruption.

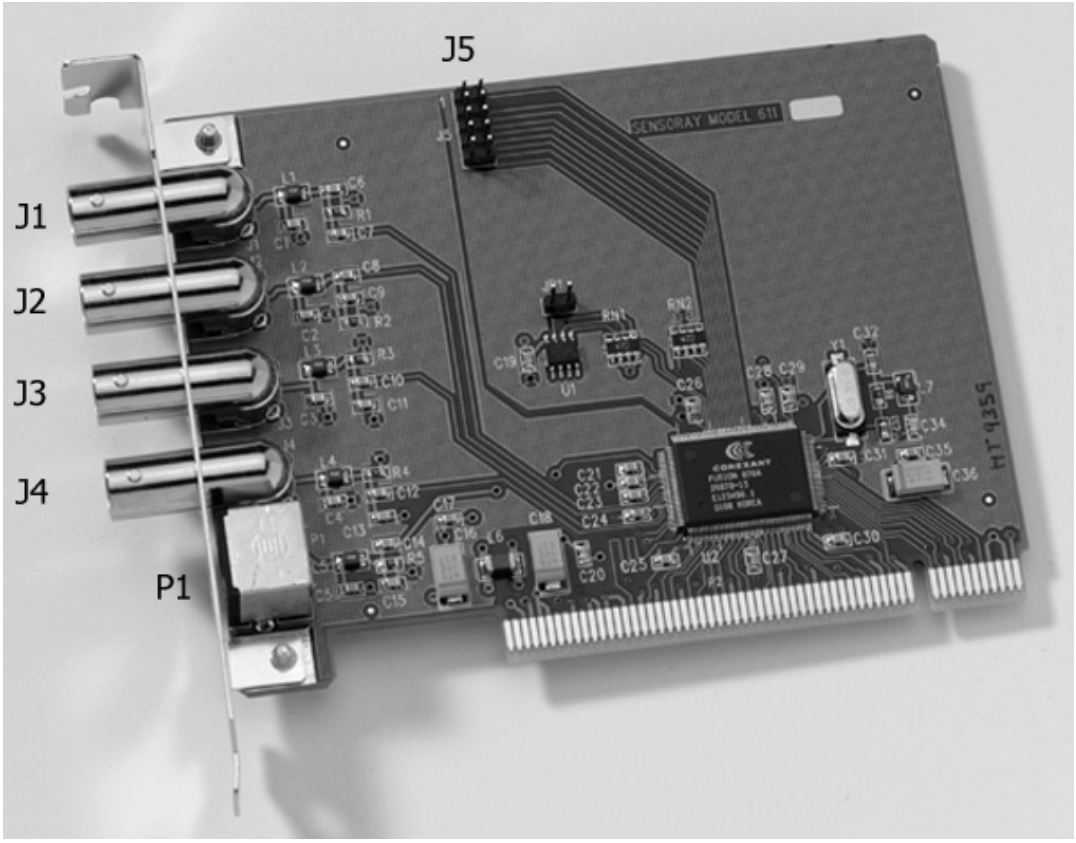
Specifications

Video sources	NTSC, PAL, SECAM, RS-170, CCIR
Video inputs	4 analog composite video; 1 analog Y/C (S-video) [1].
Output formats	RGB (15, 16, 24, 32 bits/pixel), Y8 (8 bits/pixel), YCrCb (16 bits/pixel)
Output resolution (max), pixels	754x480 (NTSC, RS-170), 922x576 (PAL, SECAM, CCIR)
A/D resolution: luminance channel chrominance channel	 8 bit 8 bit
Capture rate	Real time [2]: 30 fps (NTSC, RS-170), 25 fps (PAL, SECAM, CCIR)
General purpose I/O port	4 output and 4 input lines, CMOS, 1 interrupt input (can be used as an additional general purpose input). (10 pin ribbon cable connector).
Bus requirements	PCI, 33 MHz, 32-bit, 5 V
Power consumption	300 mA (max) @ +5V
Operating temperature	0°C to 70°C

Notes:

1. An S-video input can be used in place of 1 composite input.
2. The capture rate may be limited by the PCI-to-DRAM transfer bandwidth provided by the particular CPU design.

Connectors



Video inputs:

J1	Composite video 1
J2	Composite video 2
J3	Composite video 3
J4	Composite video 4
P1	S-video (Y/C)

Notes:

1. Composite video 4 and S-video inputs share the same physical line. Do not connect video sources to both at the same time.

GPIO connector (J5)

Pin	Signal	Pin	Signal
1	Ground	2	GPINT
3	GPO2	4	GPO3
5	GPO0	6	GPO1
7	GPI2	8	GPI3
9	GPI0	10	GPI1

Notes:

1. GPO0-GPO3 – CMOS outputs.
2. GPI1-CPI3 – CMOS inputs.
3. GPINT – general purpose interrupt pin.

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