



**VPixx Technologies**  
Vision Science Solutions

**VideoBahn™**  
The NEW fast road to SUPERIOR data

# VIEWPixx



## DIGITAL, ANALOG AND AUDIO I/O

- Button box interface
- 24 TTL trigger inputs and outputs
- Stereo audio input and output
- Analog inputs and outputs

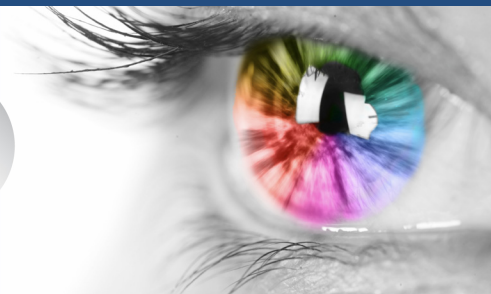
## SYNCHRONIZED DATA ACQUISITION

All digital, analog, and audio inputs and outputs feature microsecond synchronization to video refresh.

## VIDEO

- 12-bit RGB intensity
- 1920 x 1080 resolution at 120 Hz
- Scanning LED backlight with direct RGB LED array

## 120 Hz CRT Replacement



## OVERVIEW

The VIEWPixx is a complete display toolbox which has been conceived specifically to replace CRTs in vision science labs. The VIEWPixx features high-performance industrial LCD glass and a panel controller specifically designed to support vision research. Our innovative LED backlight design features superior display uniformity, and a wide color gamut exceeding that of any CRT. In addition, the VIEWPixx includes an array of peripherals which often need to be synchronized to video during an experiment, including a stereo audio stimulator, a button box port for precise reaction-time measurement, triggers for electrophysiology equipment, and even a complete analog I/O subsystem. Because we implemented the video controller and peripheral control on the same circuit board, you can now successfully synchronize all of your subject I/O to video refresh with microsecond precision.

## CONTACT US

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# SPECIFICATIONS

## LCD SPECIFICATIONS

- Display resolution: 1920(H) x 1200(V) pixels
- 22.5-inch display size (diagonal)
- Pixel pitch: 0.252(H) x 0.252(V) mm
- Pixel arrangement: RGB (Red dot, Green dot, Blue dot) vertical strip
- Active matrix LCD
- 12 bits of resolution on each of the RGB channels
- 100 Hz to 120 Hz refresh rate with zero latency stimulus presentation
- 60 Hz to 100 Hz refresh rate with internal frame buffering
- Grey-to-Grey response time:
  - 1 ms typical in scanning backlight mode
  - 7 ms typical in normal backlight mode
- Luminance:
  - 100 cd/m2 in scanning backlight mode
  - 250 cd/m2 in standard backlight mode
- Uniformity: 95% over 95% of display area
- Contrast ratio: typical 800:1
- Viewing angle: 176° (Horizontal), 176° (Vertical)
- Polarizer surface: Antiglare

## BACKLIGHT SPECIFICATIONS

- Scanning LED backlight
- Direct RGB LED array
- Wide gamut LED
- Factory white point D65

## VIDEO PROCESSING

- Video input: 1920 x 1200 pixels, 60 to 120 Hz, 24 bits (Dual link DVI)
- Deterministic timing between reception of video signal and update of display pixels
- Completely bypass all image processing "enhancements" prevalent in standard consumer LCD panels
- Multiple displays can be synchronized, showing copies or subsets of original video

## POWER

- Power consumption: 180 W
- Input voltage: 48 VDC - 3.75 A
- International AC adaptor input: 90 VAC - 264 VAC (47 Hz - 63 Hz)

## VIEWPixx Stand

- Mounting standards: VESA MIS-D/E, MIS-F
- Hole pattern: 100 x 100 mm & 75 x 75 mm

Lift	Tilt	Pan	Rotation	VESA
5" 13 cm	30°	Base 360°	90° P/L	MIS-D/E MIS-F

## ANALOG TO DIGITAL CONVERTER\*\*\*

- Number of channels: 16 (or 8 differential), on DB-25 connector
- Converter resolution: 16 bits
- Maximum sampling rate: 200 kSPS per channel
- Frequency programming modes:
  - Samples per second
  - Samples per video frame
  - Nanoseconds per sample
- Simultaneous sampling across all channels
- Input range:  $\pm 10$  V
- Input impedance:  $1.6 \times 10^8 \Omega // 3$  pF
- Absolute maximum input tolerance  $\pm 12$  V

## DIGITAL TO ANALOG CONVERTER\*\*\*

- Number of channels: 4 on DB-25 connector
- Converter resolution: 16 bits
- Maximum sampling rate: 1 MSPS per channel
- Frequency programming modes:
  - Samples per second
  - Samples per video frame
  - Nanoseconds per sample
- Simultaneous output updates
- Output range:  $\pm 10$  V
- Drive capability:  $\pm 25$  mA, 250 mW per channel

## AUDIO CODEC\*\*\*

- Audio line in, microphone in, speaker out, on 3.5 mm jacks
- Stereo microphone input amplifier resistance: 20 k $\Omega$
- Microphone sampling rate: 96 kHz
- Programmable microphone bias voltage range: 2.0 V to 3.1 V
- Stereo DAC sampling rate 96 kHz

## DIGITAL INPUT

- Number of digital inputs: 24 on DB-25 connector
- Input termination: > 20 k $\Omega$  pullup to 3.3 V
- Input tolerance: 5 V

## DIGITAL OUTPUT

- Number of digital outputs: 24 on DB-25 connector
- Output drive stage: 5 V through 25 k $\Omega$  series resistor
- Maximum output current:
  - Source: 15 mA
  - Sink: 12 mA

## SOFTWARE

Software support includes a low-level ANSI C API, MATLAB/Octave and Python libraries for use under Mac OS X, Microsoft Windows, and Linux.



\*\*\*These functionalities are available only with the VIEWPixx full version (VPX-VPX-2001C)

## ORDERING INFORMATION

Description: VIEWPixx Full LCD display and data acquisition system

P/N: VPX-VPX-2001C

Description: VIEWPixx Lite LCD display and data acquisition system

P/N: VPX-VPX-2000A

