VIEWPixx

DIGITAL, ANALOG AND AUDIO I/O

- Button box interface
- 24 TTL trigger inputs and outputs
- Stereo ausio 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

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

120 Hz
CRT Replacement

TABLETOP   VIEWPixx

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.

Authorized Distributor

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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 pannels
• 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: ±10 V
• Input impedance: $1.6 * 10^{8}$ Ω //3 pF
• Absolute maximum input tolerance ±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: ±10 V
• Drive capability: ±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 kΩ
• 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 kΩ 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 kΩ 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