Discovery 60 PCB Image Processor

The Discovery 60 PCB uses an FPGA in addition to dual-core processor technology to provide a powerful FPGA+DSP platform capable of executing a complete suite of real-time video image- processing functions simultaneously. It also includes an ARM-9 general-purpose microprocessor running embedded Linux for robust user-interface and control implementations.

The Discovery 60 PCB runs applications firmware from Pixon Imaging's Discovery Algorithm Suite to provide an exceptionally powerful a turn-key video image- processing system for military, homeland security, surveillance, scientific, and other high-end imaging applications.

Specifications

Video inputs	
Video In	75 ohm, composite (CVBS, RS-170), 1 V p-p, NTSC or PAL format
Video outputs	
Video Out	Composite (CVBS, RS-170), 1 V p-p into 75 ohm load, video format same as "Video In" signal
Video loop-through	Composite (CVBS, RS-170), 1 V p-p into 75 ohm load, buffered "Video In" signal
Video bypass feature	
Video-signal-processing bypass (solid-state switching), software-controlled or hardware external control (logic-level); default mode on power-down or watchdog failure is bypass	Buffered output
Alternate power input	
3.3 to 5.5 VDC, 40 mA maximum	Alternative power input to maintain bypass and loop-through amplifiers if main power source fails
Control ports	
Serial port	RS-232 or +3.3 V UART, Switch-selectable
GPIOs	
Logic-level I/O (each line programmable as input or output)	6 lines, 1.8 V logic levels, unbuffered (external buffers and ESD protection may be required)
Power requirements	
Supply voltage	5.0 VDC ±10%
Load regulation	±5%, maximum ripple 50 mV p-p, transient response 2 ms for 50% load change
Line regulation	±5%

Supply current	650 mA typical (at 5.0 VDC)
Environmental	
Ambient temperature range, operating [1]	0 to 70 ºC standard
Ambient temperature range, storage	−60 to 85 ºC
Humidity	3% – 90%, non-condensing
Dimensions	
H x W x D (with MCX extension, 90-deg MCX connectors)	50.0 x 86 x 14.0 mm
Weight (with MCX extension, 90-deg MCX connectors)	67 g

Software
Region of interest - Selects region of video to be processed
Brightness control - Dynamic range control for adjusting the balance between dark and light areas
Power contrast - Sharpens features in low contrast areas and increases the difference between the light and dark portions for each feature
Dehazing - Color recovery and haze (rain, fog, smoke, dust, murky water) removal
Noise reduction - Removes noise by frame averaging
Motion adaptive noise reduction - Removes noise in stationary features and leaves moving features unprocessed so the don't disappear
Gamma correction - Controls brightness, similar to the brightness function on a TV or computer monitor

Mechanical drawing
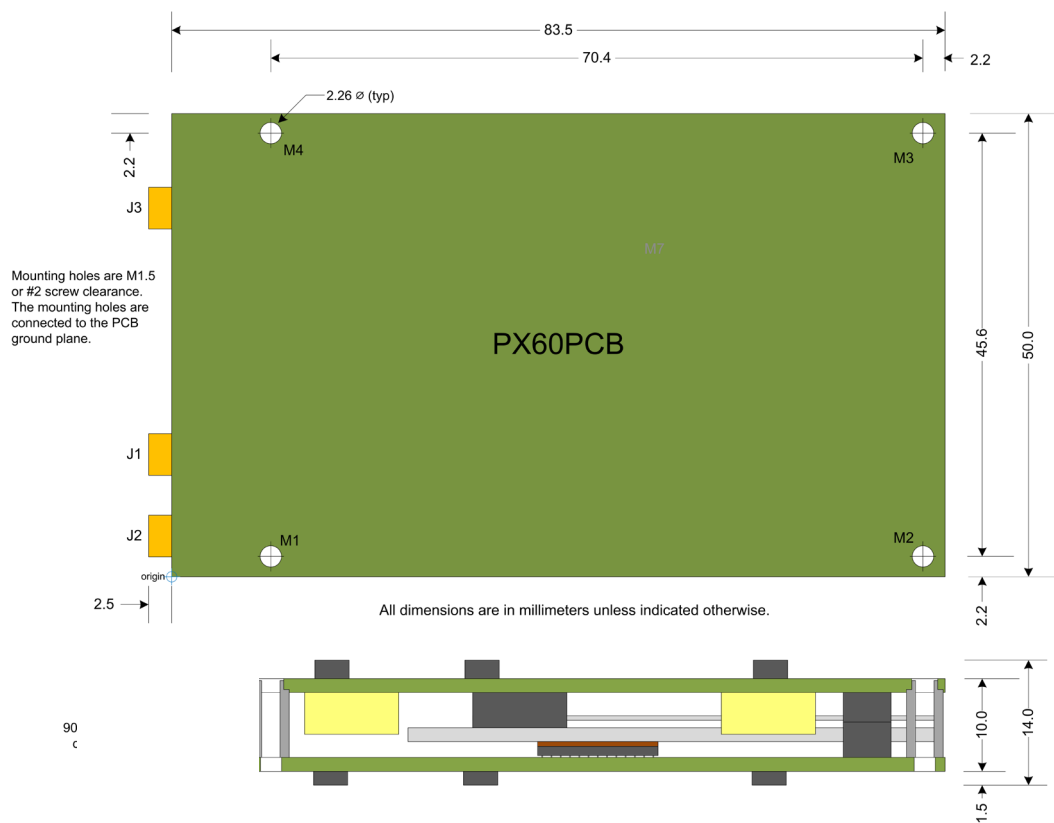
For more information

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