

### Scientific DMD Control

Ajile DMD controllers simplify the precise control of digital micromirror devices to achieve their full potential. The AJD-4500 allows for frame-by-frame high-speed control of DMD devices with the accuracy required for scientific, medical and industrial applications.

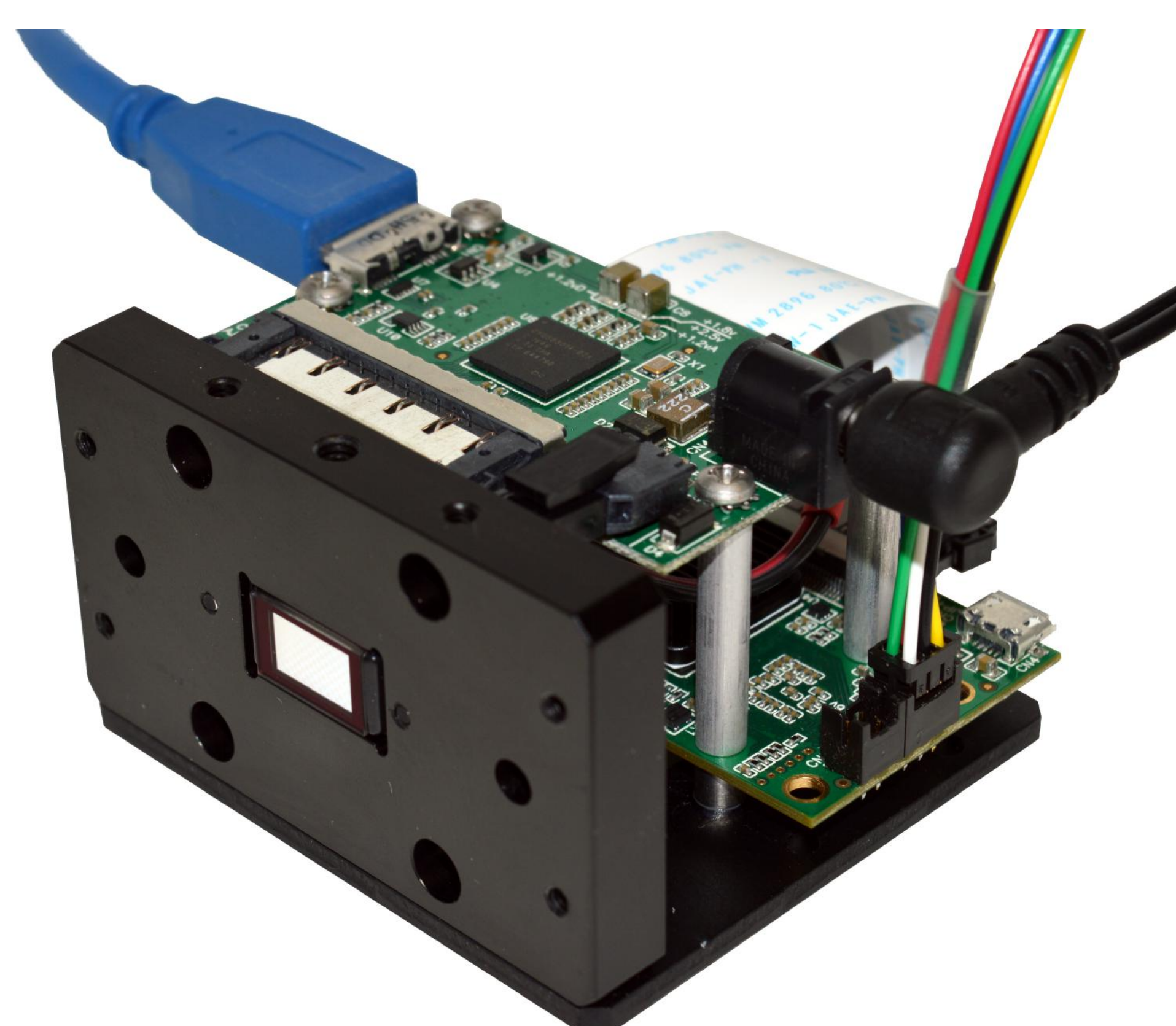
### Key Features

- Scientific controller for 0.45" DMD (912 x 1140 micromirrors)
- Ajile GUI and full SDK with Python/C++/C#/Matlab support
- Controller can drive the DMD at 6,600 fps (more with reduced ROI)
- 1 GB of memory (7000 images), randomly accessible at full speed
- Independent, per frame control of timing and lighting parameters
- Stream images continuously at 2,500 fps with accurate frame timing
- Provides a low-latency synchronization core for the DMD and external devices via programmable input and output triggers
- Arbitrary bit-depth for grayscale and color (e.g. 4, 8, 10 or 16 bit)
- Take direct control of the DMD and each individual micromirror
- On-board Linux processor and FPGA for embedded smart control

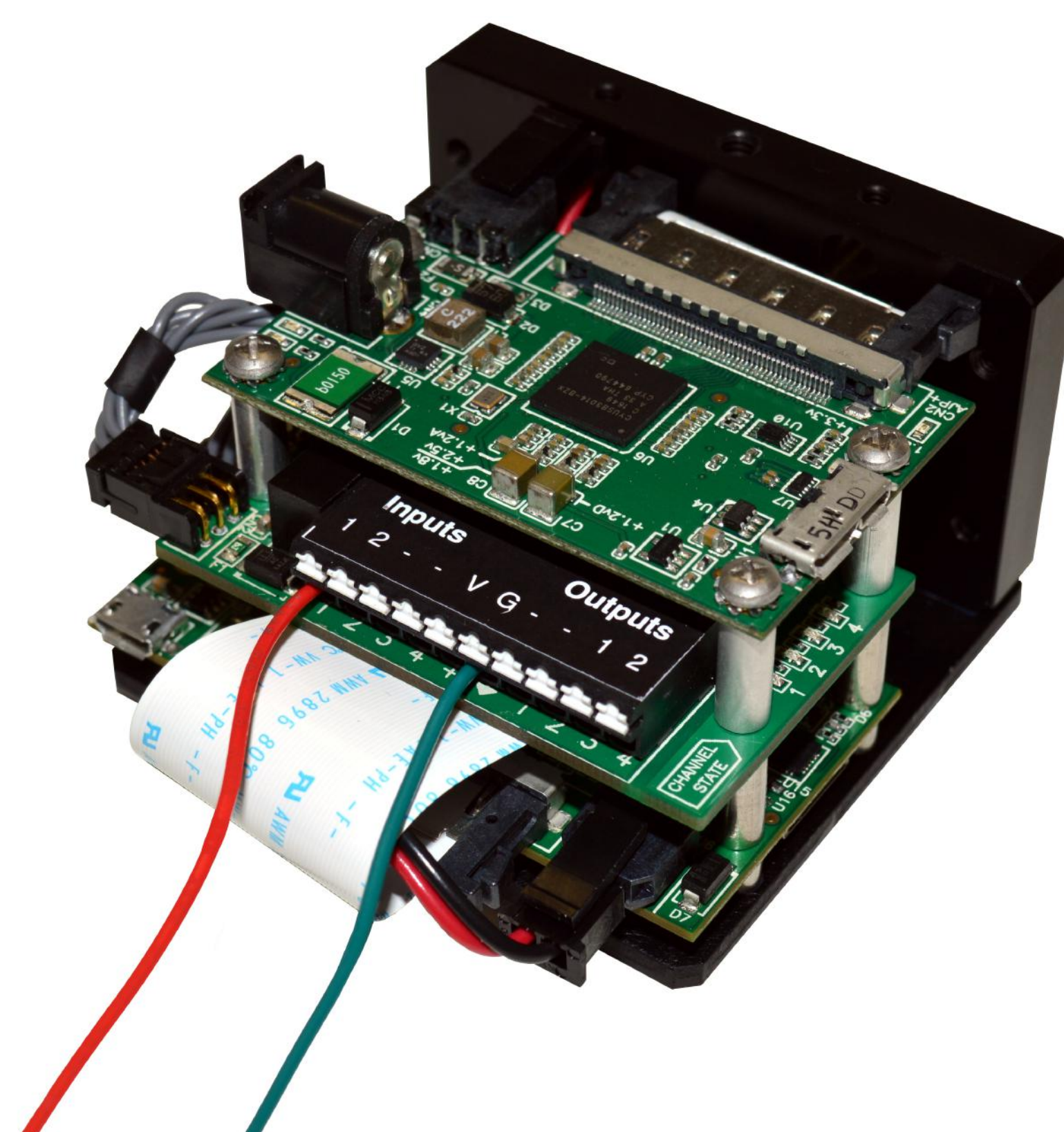


# AJD-4500 Controller Details

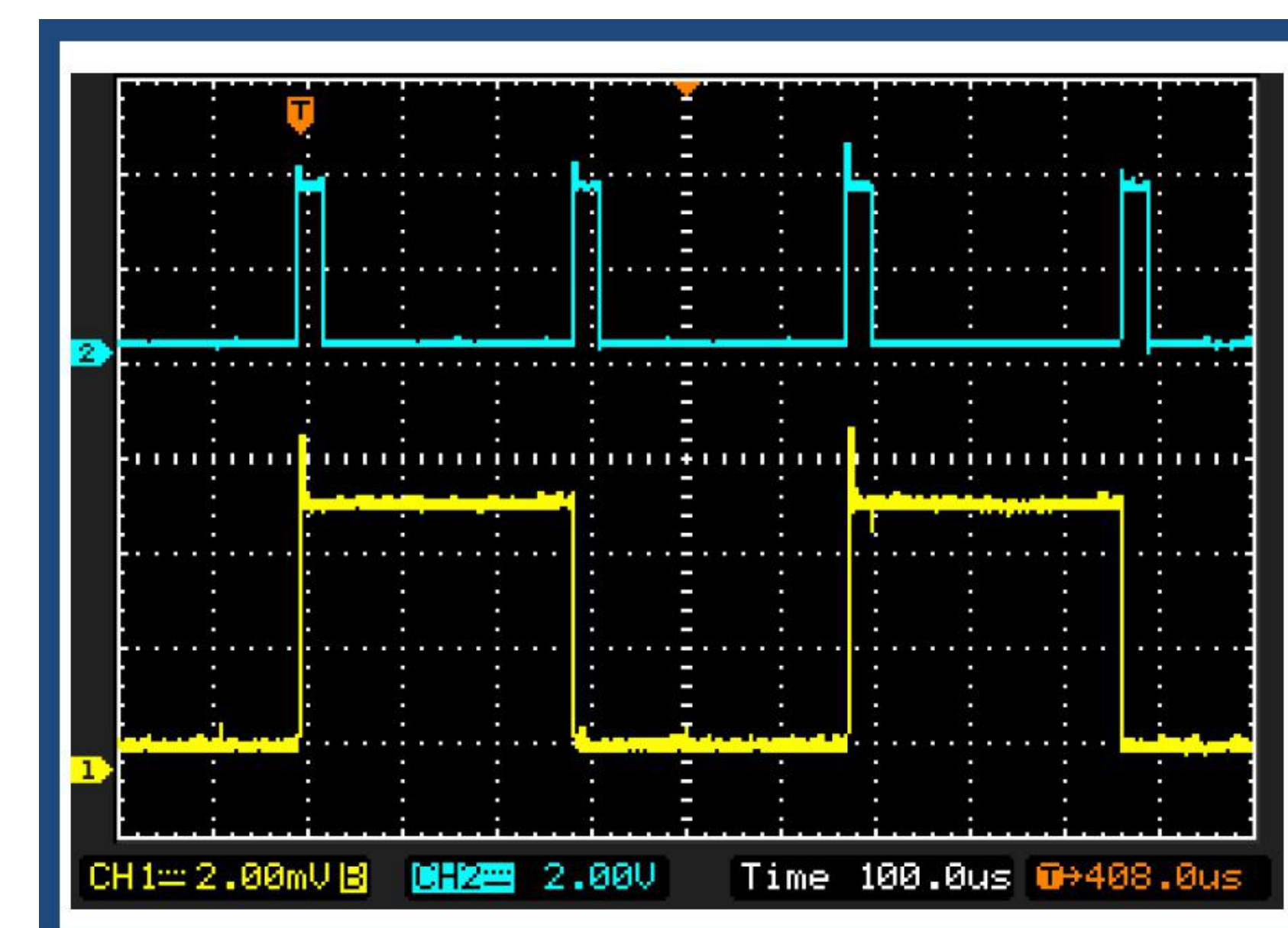
DMD	0.45" DMD (912 x 1140 micromirrors) FQD package with enhanced thermal interface
Controller Chip	Xilinx Zynq 7010 SoC with dual-core ARM and FPGA
Interfaces	USB 2 (native) USB 3.0 (optional add-on board)
On-Board Memory	1 GB RAM
Frame Rates	0.02 Hz – 6,660 Hz (full resolution) 100,000 Hz (16 x 1140 resolution)
Frame Times	150 microseconds - 43 seconds
External Triggers In	Two, configurable to: <ul style="list-style-type: none"> <li>- Start Frame</li> <li>- Start Lighting</li> <li>- End Lighting</li> </ul>
External Triggers Out	Two, selectable from: <ul style="list-style-type: none"> <li>- Next Frame Ready</li> <li>- Frame Started</li> <li>- Frame Ended</li> <li>- Lighting Started</li> <li>- Lighting Ended</li> </ul>
Region of Interest	From 16 x 1140 to 912 x 1140
Image Store	7,000 912 x 1140 binary images (can be randomly displayed at 6,600 fps)
Non-Volatile Storage	Micro SD card - up to 32 GB for project storage
Optional Add-ons	USB 3.0 Communications Board Opto-isolation Triggering Interface Board
Power Supply	5V DC



AJD-4500-U with USB3.0 Communications Add-On



AJD-4500-UT with Opto-isolated triggering and USB3.0 Communications Add-Ons



Light output from DMD on/off pattern with start frame trigger