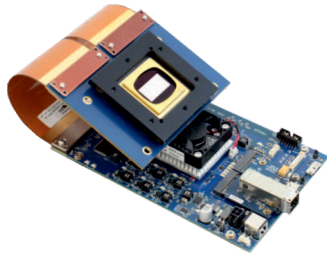


# UltraSpeed V-Modules

Options: **UV** **VIS** **NIR**  
**DLS**



## As fast as possible: UltraSpeed V-Modules for Texas Instruments high-performance DLP® technology



High-performance DLP (Digital Light Processing) from Texas Instrument is a technology of MEMS spatial light modulators that goes far beyond standard multimedia projections and automotive display applications.

With the V-Module series, ViALUX offers a broad product range that stands out from ordinary DLP projectors, but offers the highest performance and flexibility within the DLP chipset family.

The existing Hi-Speed (USB 2.0) and SuperSpeed (USB 3.0) performance classes of the V-Modules are supplemented by our next generation: UltraSpeed V-Modules (USB 3.0 and PCIe x4 Gen3).

UltraSpeed V-Modules allow users to stream image data at the full switching rate of the DMD. All UltraSpeed V-Modules are equipped with an external PCIe interface. This, in conjunction with the expandable on-board DDR4 memory enables the user to achieve high-performance streaming between PC and V-Module. In case of the V-7002, data streaming is even faster than the switching rate of the DMD. The possibility of stable data transfer between the module and the PC over long distances via fiber optical cables rounds off the list of advantages.

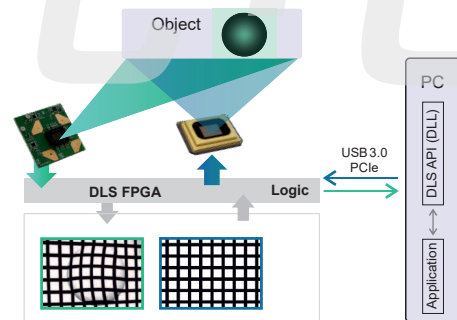
In addition, the UltraSpeed V-Modules are equipped with a connection option for an image sensor that supports our DLS (Direct Link Sensor) concept – perfectly synchronized DLP projection with corresponding image acquisition within a single FPGA logic.



\* Switching rate at 1 bit B/W with full array | \*\* Preliminary

Powered by the recognised ALP software the V-Modules offer great versatility and are well suited for industrial and academic research, as well as highly reliable OEM components for mass production.

The PCIe and USB device drivers support all current Microsoft Windows® operating systems and guarantee smooth integration with wide variety of desktop PCs. The V-Module software ALP-5.0, a DLL library, fits seamlessly into standard programming platforms like C++, C#, Visual Basic (.NET), Python, MATLAB, LabVIEW, and other development platforms and is fully compatible to all former ALP-4 versions \*\*\*



Five UltraSpeed V-Modules with different wavelengths are available. Depending on the chipset, the UltraSpeed V-Modules differ in the extension board, which is connected with one or two flex cables for data exchange.

- V-7002**    **VIS/UV**    with 0.7" XGA DMD for visible or ultra-violet light (DLP7000VIS/DLP7000UV)
- V-9502**    **VIS/UV**    with 0.95" 1080p DMD for visible or ultra-violet light (DLP9500VIS/DLP9500UV)
- V-650L02**    **NIR**    with 0.65" WXGA DMD for near-infrared light (DLP650LNIR)
- V-6502<sup>1</sup>**    **VIS**    with 0.65" 1080p DMD for visible light (DLP6500VIS)
- V-9002<sup>1</sup>**    **VIS/UV**    with 0.9" WQXGA DMD for visible or ultra-violet light (DLP9000XVIS/DLP9000XUV)

<sup>1</sup>available from January 2025

Optionally available are:

- Various flex cable lengths and form factors
- RAM extension to 256 Gbit (32 GB)
- Different image sensors called ViALUX V-Cams
- Fiber optical cables (up to 100m)

\*\*\* Microsoft, Windows, .NET are registered trademarks of Microsoft Cooperation. MATLAB is a registered trademark of MathWorks, LabView is a registered trademark of National Instruments  
 DLP is a registered trademark of Texas Instruments.



联系人: 于工 (北方区) 电话: 13127820466  
 联系人: 步工 (南方区) 电话: 18621128645

info@auniontech.com  
 www.auniontech.com

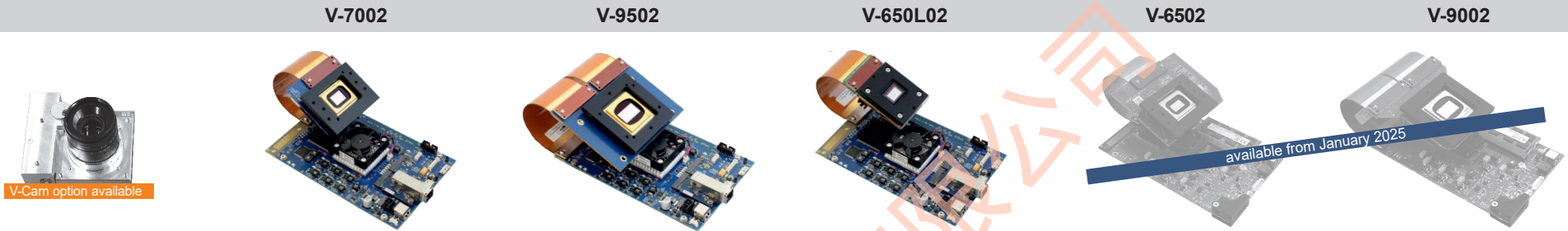


Website: www.auniontech.com E-mail: info@auniontech.com

上海昊量光电设备有限公司 Phone: 4006-888-532 WeChat: Auniontech



# UltraSpeed V-Modules specifications



	V-7002	V-9502	V-650L02	V-6502	V-9002
Chipset	DLP7000 & DLPC410	DLP9500 & DLPC410	DLP650LNIR & DLPC410	DLP6500 & DLPC910	DLP9000X & DLPC910
Type A DMD	0.7" XGA	0.95" 1080p	0.65" WXGA	0.65" 1080p	0.9" WQXGA
Window Options	VIS, UV	VIS, UV	NIR	VIS	VIS, UV
Micromirror Array	1024 x 768	1920 x 1080	1280 x 800	1920 x 1080	2560 x 1600
Micromirror Pitch	13.7 µm	10.8 µm	10.8 µm	7.6 µm	7.6 µm
Active Mirror Array Area	14.0 x 10.5 mm <sup>2</sup>	20.7 x 11.7 mm <sup>2</sup>	13.8 x 8.6 mm <sup>2</sup>	14.5 x 8.2 mm <sup>2</sup>	19.4 x 12.1 mm <sup>2</sup>
Controller Board Type	V5095	V5095	V5095	V5090	V5090
Control Board Dimensions	162 x 99 mm <sup>2</sup>	162 x 99 mm <sup>2</sup>	162 x 99 mm <sup>2</sup>	162 x 99 mm <sup>2</sup>	162 x 99 mm <sup>2</sup>
DMD Board Dimensions	67 x 50 mm <sup>2</sup>	102 x 83 mm <sup>2</sup>	63 x 47 mm <sup>2</sup>	101 x 78 mm <sup>2</sup>	95 x 88 mm <sup>2</sup>
Flexible Cable Length	105 / 283 / 573 mm	105 / 283 / 573 mm	105 mm	105 / 283 / 573 mm	105 / (283) mm
RAM Capacity on Board	128 Gbit / 256 Gbit	128 Gbit / 256 Gbit	128 Gbit / 256 Gbit	128 Gbit / 256 Gbit	128 Gbit / 256 Gbit
Binary Patterns on Board	174762 / 349524	62137 / 124274	111848 / 223696	62137 / 124274	33554 / 67108
Hardware Trigger	master / slave	master / slave	master / slave	master / slave	master / slave
Controller Suite	ALP-5.0	ALP-5.0	ALP-5.0	ALP-5.0	ALP-5.0
Max. Switching Rate 1bit B/W	22727 Hz	17857 Hz	10752 Hz	10309 Hz	12987 Hz
Max. Switching Rate 6bit Gray	1091 Hz	987 Hz	856 Hz	871 Hz	1013 Hz
Max. Switching Rate 8bit Gray	290 Hz	266 Hz	258 Hz	266 Hz	303 Hz
Max. Switching Rate 12bit Gray	18 Hz	17 Hz	17 Hz	17 Hz	20 Hz
PC Interface	USB 3.0 / PCIe	USB 3.0 / PCIe	USB 3.0 / PCIe	USB 3.0 / PCIe	USB 3.0 / PCIe
PC Transfer Rate*	2800 - 5300 fps (USB 3.0) 23000 fps (PCIe)**	1000 - 2500 fps (USB 3.0) 8200 fps (PCIe)**	900 - 2300 fps (USB 3.0) 7400 fps (PCIe)**	1000 - 2500 fps (USB 3.0) 8200 fps (PCIe)**	600 - 1500 fps (USB 3.0) 4900 fps (PCIe)**
Camera Port	1x	1x	1x	1x	1x
Camera Cable Length	600 / 250 mm	600 / 250 mm	600 / 250 mm	600 / 250 mm	600 / 250 mm
Image Sensor (on request)	IMX174 / 422 / 536	IMX174 / 422 / 536	IMX174 / 422 / 536	IMX174 / 422 / 536	IMX174 / 422 / 536
Controller Suite (Camera Option)	DLS-API	DLS-API	DLS-API	DLS-API	DLS-API

Rev-NC: P-24-06-199



\* Typical value, can vary depending upon PC.  
\*\* Preliminary