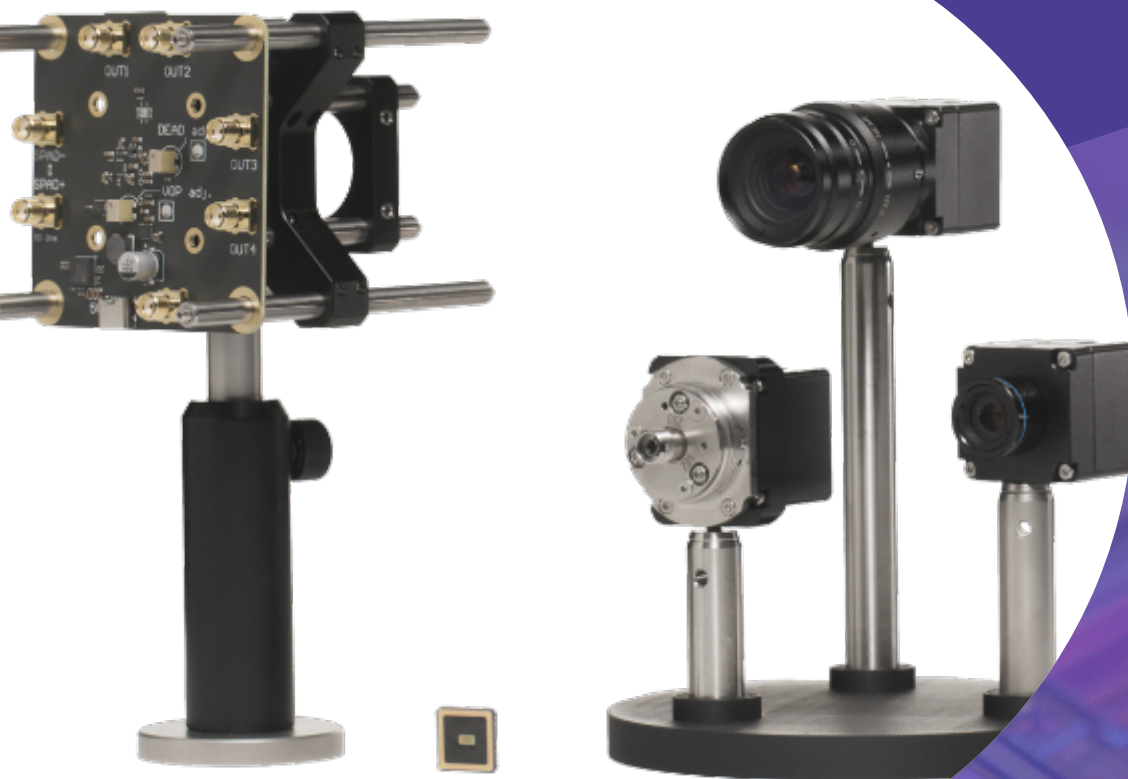# NOVOVIZ

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NovoViz

NovoViz redefines what's possible in photon detection. Just as OLED transformed displays, SPAD sensors are redefining vision—detecting single photons for unmatched speed and sensitivity. But with great data comes great complexity.

NovoViz changes the game.

NovoViz' advanced on-chip processing integrates directly with SPAD pixels —cutting cost, reducing complexity, and unlocking scalable, high-performance imaging. They are a semiconductor innovator, making next-gen vision ready for the real world.

PHOTON DETECTION

peo PHOTONICS

Photon Detection

NV04ASC-HW Asynchronous Single-Photon Camera

The NovoViz NV04ASC-HW Asynchronous photon-driven camera was developed for applications requiring high sensitivity and/or frame rate but with reduced output bandwidth.

The camera combines the benefits of a single-photon avalanche diode (SPAD) camera, namely the single-photon resolution and fast operating speeds, with the benefits of an event camera – low output data rates.
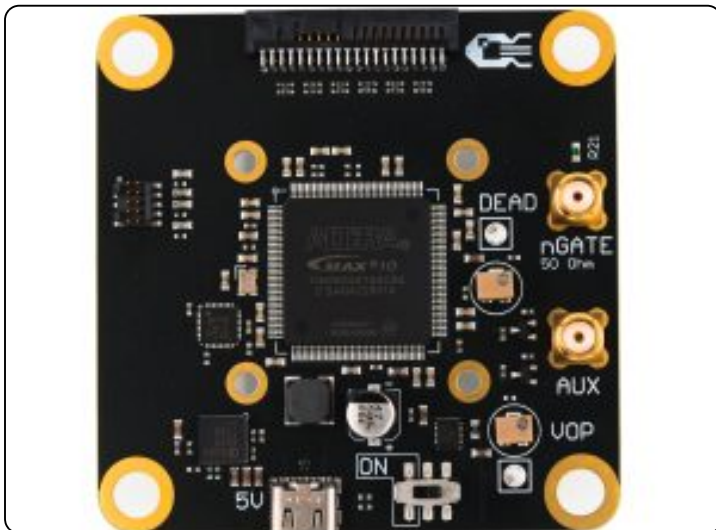
Photon Detection

NV07SLN-DEV Small line sensor development module

The NovoViz NV07SLN-DEV requiring single photon line detectors with low timing jitter. The device does not require any external threshold circuitry and provides an asynchronous digital output for every pixel. Accumulated counts are read over the single USB connection that also provides power.

The sensor combines the benefits of a single-photon avalanche diode (SPAD) pixel, namely the single-photon resolution and fast operating speeds, with the benefits of on chip recharge and threshold circuitry – high event rates and reduced noise.

The array can be reshaped instantaneously from one to two lines with a digital signal. In addition, the two lines can be combined through AND gates to provide coincidence detection capabilities. The two line pixel pitch was designed to match with off the shelf optical fiber bundles. The sensor is well suited for interferometry, spectroscopy, high dynamic range imaging and low light imaging, among others.
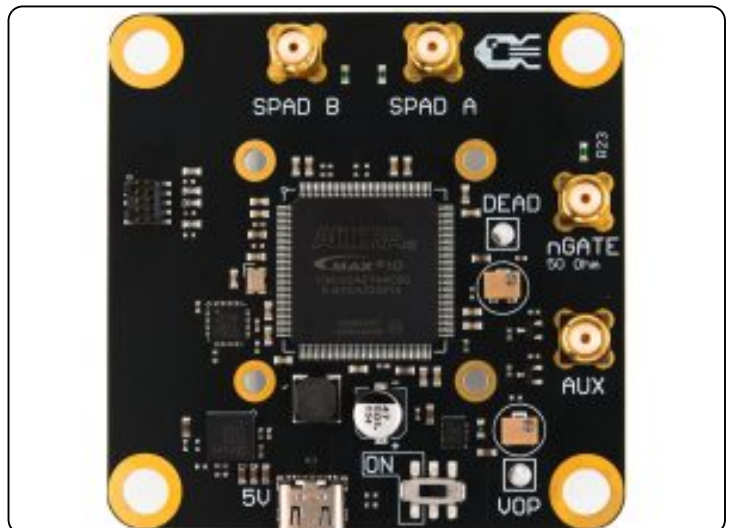
Photon Detection

NV02TPX-DEV Two-pixel correlator development module

The NovoViz NV02TPX-DEV was developed for applications requiring fast correlation times and single photon sensitivity. The device does not require any external threshold circuitry, provides direct access to SPAD outputs and uses a single USB connection for both power and data.

The sensor combines the benefits of a single-photon avalanche diode (SPAD) pixel, namely the single-photon resolution and fast operating speeds, with the benefits of on chip digital processing – reduced output data rates.

Our innovative sensor architecture performs all the correlation computations simultaneously for every acquisition step and stores the results in internal memory. At the end of the user-defined exposure period, the data can be retrieved, after which the process can be repeated. The sensor is well suited for applications such as diffuse correlation spectroscopy and quantum optics, among others.
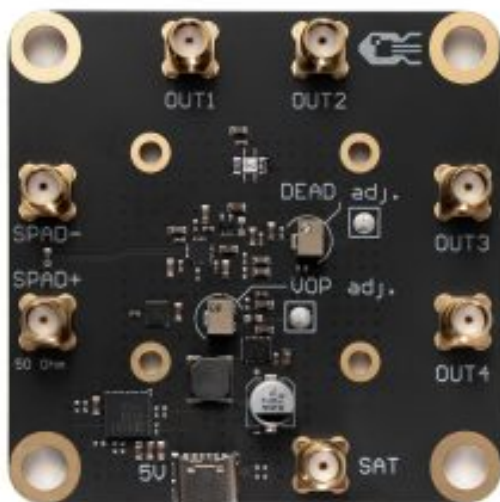
Photon Detection

NV01PNR-DEV Photon number resolver development module

The NovoViz NV01PNR-DEV was developed for applications requiring single photon point detectors with low timing jitter. The device does not require any external threshold circuitry and provides a fully digital output, compatible with standard CMOS electronics.

The sensor combines the benefits of a single-photon avalanche diode (SPAD) pixel, namely the single-photon resolution and fast operating speeds, with the benefits of on chip recharge and threshold circuitry – high event rates and reduced noise.

Our innovative sensor architecture has dedicated outputs for single, two, three and four photon thresholds as well as a separate output that connects to a single SPAD in order to optimize the timing jitter. The sensor is well suited for high dynamic range imaging, low light imaging, depth sensing and obstacle detection, among others.

Photon Detection

NV03TDC-DEV Photon burst detector development module

The NovoViz NV03TDC-DEV was developed for applications requiring single-photon sensitivity point detectors and burst timestamping capabilities. The device does not require any external threshold circuitry and uses a single USB connection for both power and data.

The sensor combines the benefits of a single-photon avalanche diode (SPAD) pixel, namely the single-photon resolution and fast operating speeds, with the benefits of on chip timestamping and memory – high event rates and reduced output data rates.

Our innovative sensor architecture has a multi-shot time to digital converter connected to a free running gated SPAD pixel. The timing resolution is defined by an externally provided clock signal. The events are stored in the on-chip FIFO and can be read at any time by the user. The sensor is well suited for lifetime measurements, high dynamic range imaging, low light imaging and depth sensing, among others.