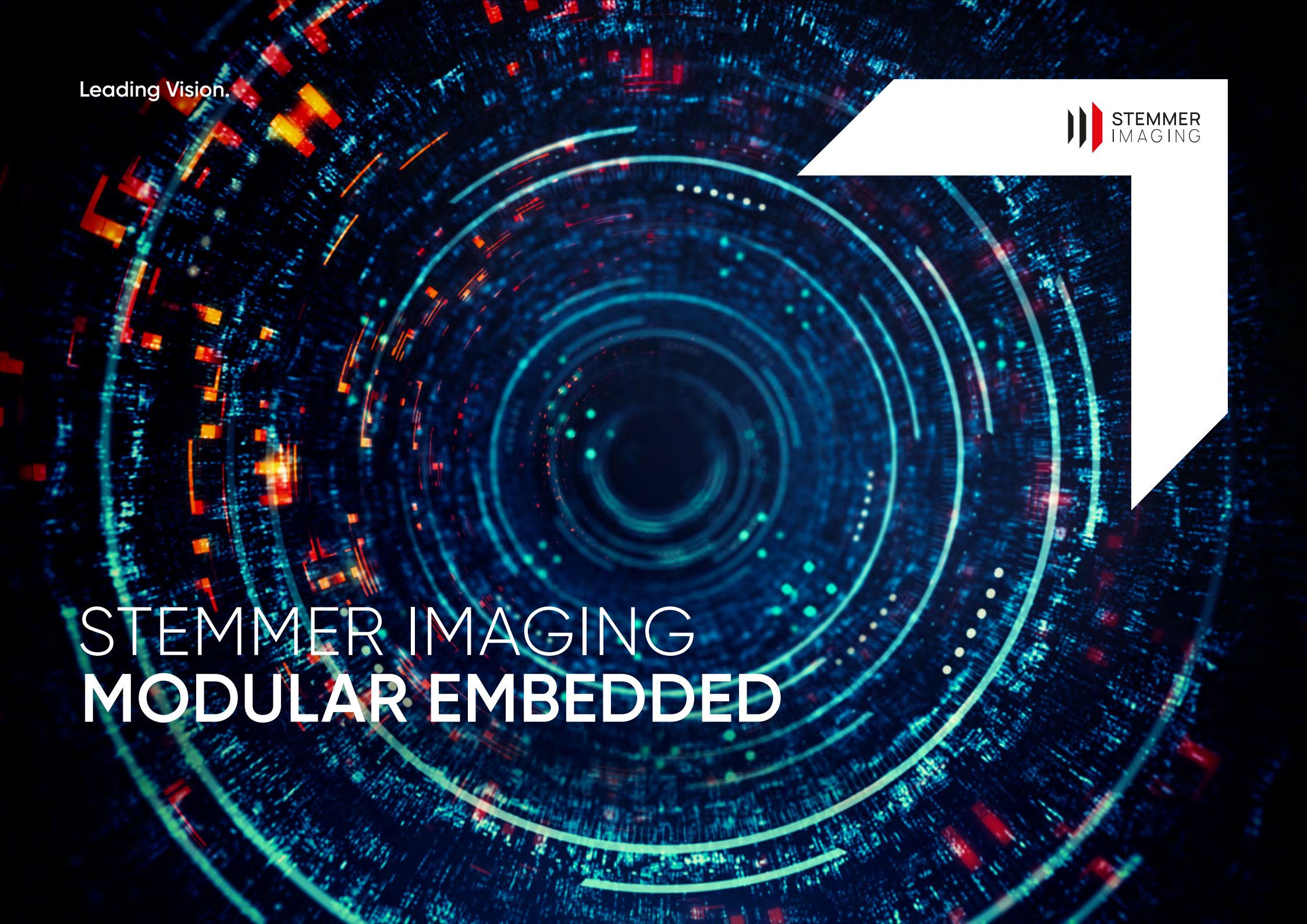

Leading Vision.
STEMMER
IMAGING
STEMMER IMAGING
MODULAR EMBEDDED

A NEW EMBEDDED VISION.

More than just an innovative hardware concept – MODULAR EMBEDDED by STEMMER IMAGING is a future-proof hardware and software toolbox enabling customer-centric embedded vision solutions to be created with short development cycles directly on mass production hardware.

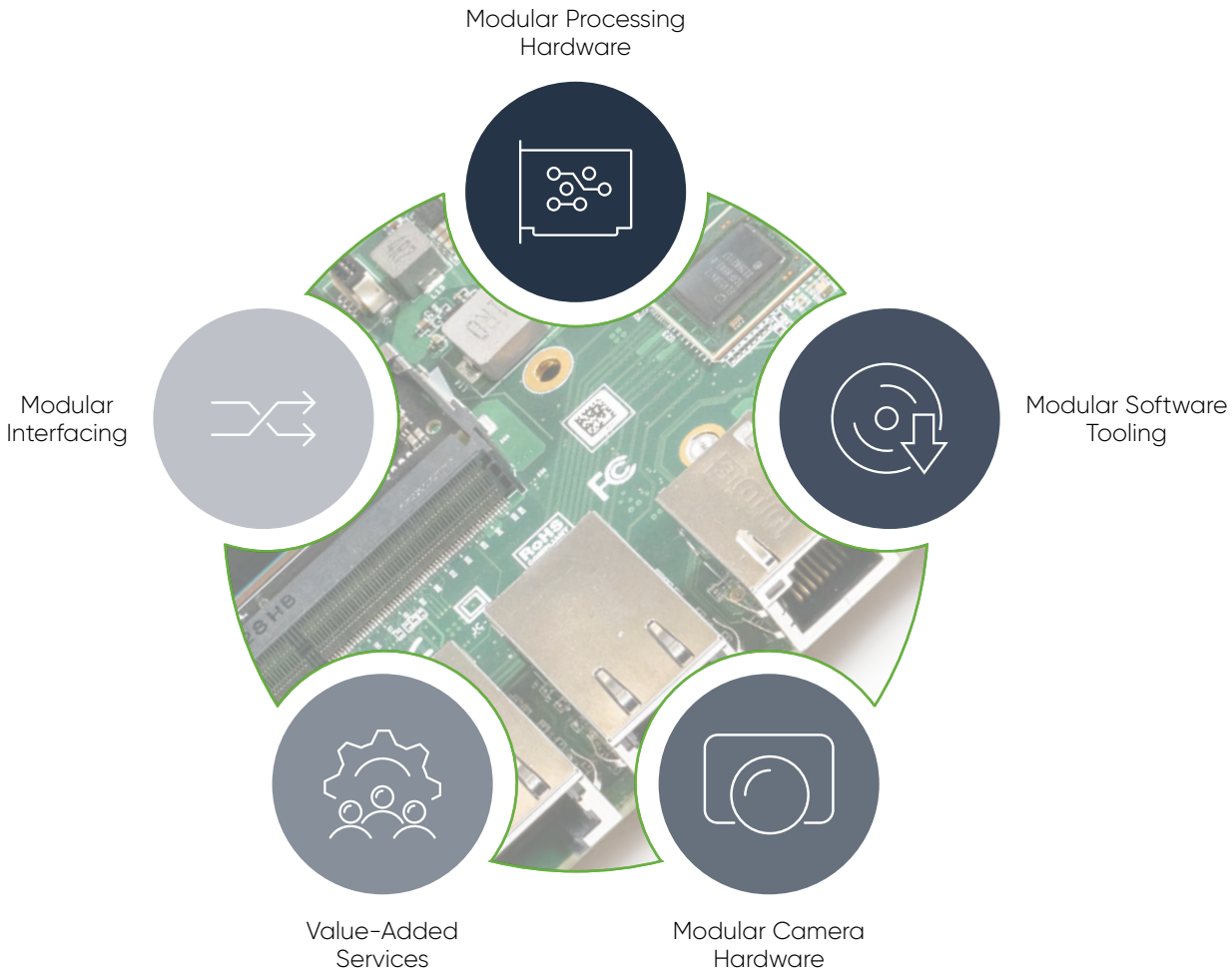
Modular Embedded by STEMMER IMAGING is a new step in the world of embedded vision systems. Setup as a comprehensive ecosystem, Modular Embedded relies on the most powerful hardware selection combined with a huge variety of state-of-the-art cameras, the best software tools and individual service packages. In sum, everything you need from one single source with expert knowledge you can rely on.

With Modular Embedded you can create a ready-to-use embedded vision subsystem which acquires the image data needed by your application easily and quickly, thus enabling you to focus on the image processing and data evaluation tasks right from the start. Accelerate integrating embedded vision into your applications and products.

A NEW EMBEDDED VISION.
STEMMER IMAGING MODULAR EMBEDDED.

Setup as a comprehensive ecosystem, Modular Embedded relies on the most powerful hardware selection combined with a huge variety of state-of-the-art cameras, the best software solution and individual service packages.

- Full-featured industrial carrier board for commercially deployable embedded vision systems
- State-of-the-art and flexible hardware thanks to NVIDIA GPU selection
- Multiple interfaces for most flexible sensor selection
- Individual and manufacturer-independent camera selection for maximum flexibility
- CVB – a software toolbox for acquisition, processing and object recognition
- STEMMER IMAGING services for value-added support

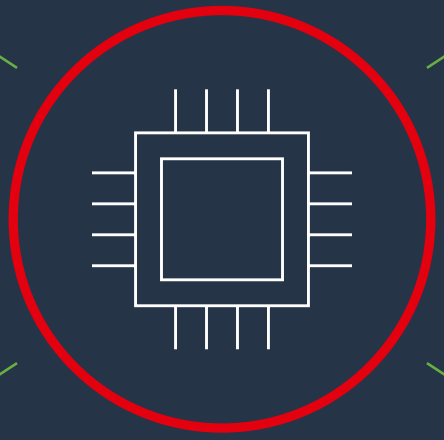


MORE FLEXIBILTIY. MORE CHOICE.
MODULAR EMBEDDED.

MODULAR PROCESSING HARDWARE

State-of-the-art hardware and application focused GPU selection

- NVIDIA Jetson Nano
- NVIDIA Xavier NX
- NVIDIA TX2 NX



MODULAR SERVICES

Your value added service partner

- Individual tailored manufacturing & technical services
- Project consulting
- Customisation support
- (Pre-) Production and quality assistance
- Co-development services

MODULAR SOFTWARE TOOLING

A powerful software toolbox for acquisition, processing and object recognition

- h265-Streaming (CUDA/GPU)
- Shapefinder (CUDA/GPU)
- GPU-Pusher
- GEV Server (CPU)

MODULAR CAMERA HARDWARE

Individual and manufacturer-independent camera selection

- 1G, 5G, 10G UDP: full support for almost any GigE and USB3 vision camera hardware*
- 5G TCP Offload: Allied Vision Alvium G5 Series**
- MIPI CSI-2: Allied Vision Alvium 1800C Series**
- Custom: e.g. Intel RealSense

MODULAR INTERFACING

"One fits all" – multiple interfaces

- 1G, 5G, 10G UDP
- 5G TCP offload
- USB3 (zero copy)
- MIPI CSI-2 over GenICam
- Custom STEMMER-TL (e.g. Intel RealSense, ...)

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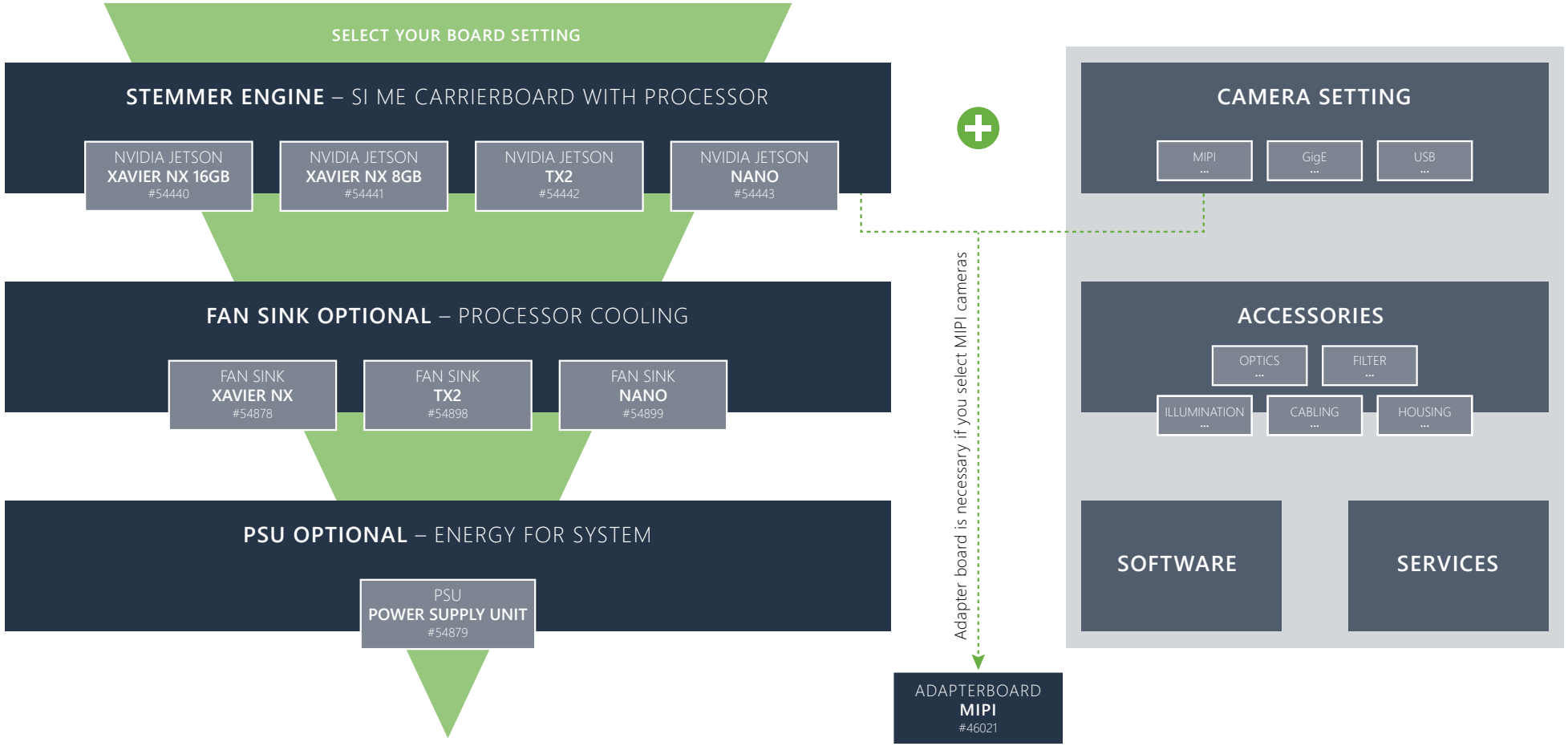
* full support only available for camera hardware purchased through STEMMER IMAGING

** more to come

MORE FLEXIBILTIY. MORE CHOICE.
MODULAR EMBEDDED.

Modular Embedded enables developers to integrate embedded vision into their devices easily, quickly, and flexibly by supporting them in the best possible way. From factory automation, logistics and transport to sports & entertainment as well as smart agriculture – the application areas of Modular Embedded are extremely diverse and can be found wherever speed and precision are required.

MORE FLEXIBILTIY. MORE CHOICE.
MODULAR EMBEDDED.



AT A GLANCE

- Full-featured industrial carrier board for commercially deployable embedded vision systems
- Powerful and flexible hardware thanks to NVIDIA Xavier NX, TX2 NX and Jetson Nano module support
- "One fits all" – manufacturer-independent modular interfacing with generic camera driver
- Reduced system footprint for easy integration in space-constrained vision systems
- State-of-the-art hardware backbone for the STEMMER IMAGING "out-of-the-box" industrial embedded solution

TECHNICAL DATA.

SPECIFICATIONS	SI ME CARRIERBOARD-NX-8GB-01	SI ME CARRIERBOARD-NX-16GB-01	SI ME CARRIERBOARD-TX2-NX-01	SI ME CARRIERBOARD-NANO-01
MODULE SUPPORT				
Module	NVIDIA Xavier NX 8GB	NVIDIA Xavier NX 16GB	NVIDIA TX2 NX	NVIDIA Jetson Nano
Memory	8 GB	16 GB	4 GB	4 GB
Storage	16 GB eMMC	16 GB eMMC	16 GB eMMC	16 GB eMMC
REAR PANEL I/O PORTS				
LAN	1x 1GbE (RJ45) 2x 10GbE (RJ45)	1x 1GbE (RJ45) 2x 10GbE (RJ45)	1x 1GbE (RJ45) 2x 10GbE (RJ45) *1	1x 1GbE (RJ45) 2x 10GbE (RJ45) *2
USB	2x USB3.2 Gen2 Type-A *3 1x USB2.0 Type-C (OTG)	2x USB3.2 Gen2 Type-A *3 1x USB2.0 Type-C (OTG)	2x USB3.2 Gen1 Type-A *4 1x USB2.0 Type-C (OTG)	2x USB3.2 Gen1 Type-A *4 1x USB2.0 Type-C (OTG)
Video	1x HDMI	1x HDMI	1 x HDMI	1 x HDMI
PERIPHERALS				
M2 Interface	M.2 M key 2280 *5	M.2 M key 2280 *5	M.2 M key 2280 *6	N/A

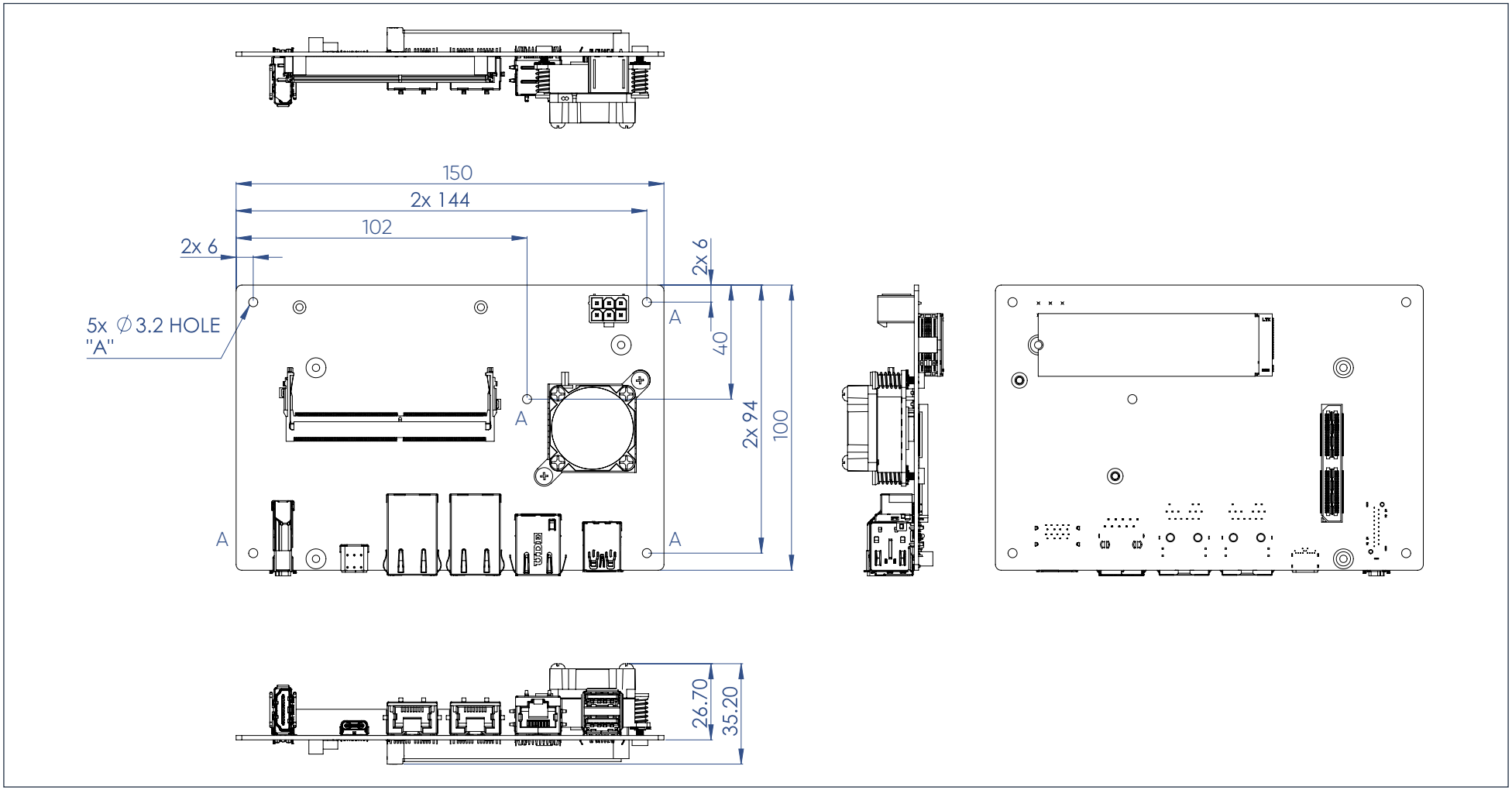
*1 Maximum bandwidth shared approx. 800 MByte/s (due to 2x PCIe Gen2 interface of NVIDIA Jetson TX2)
*2 Maximum bandwidth shared approx. 1,6 GByte/s (due to 4x PCIe Gen2 interface of NVIDIA Jetson Nano)
*3 Maximum bandwidth shared approx. 1,25 GByte/s (due to USB 3.1 mode of NVIDIA Jetson Xavier NX)
*4 Maximum bandwidth shared approx. 600 MByte/s (due to USB 3.0 Super Speed mode of NVIDIA Jetson TX2/Nano)
*5 Maximum bandwidth approx. 1 GByte/s
*6 Maximum bandwidth approx. 500 MByte/s

SPECIFICATIONS FOR ALL MODELS

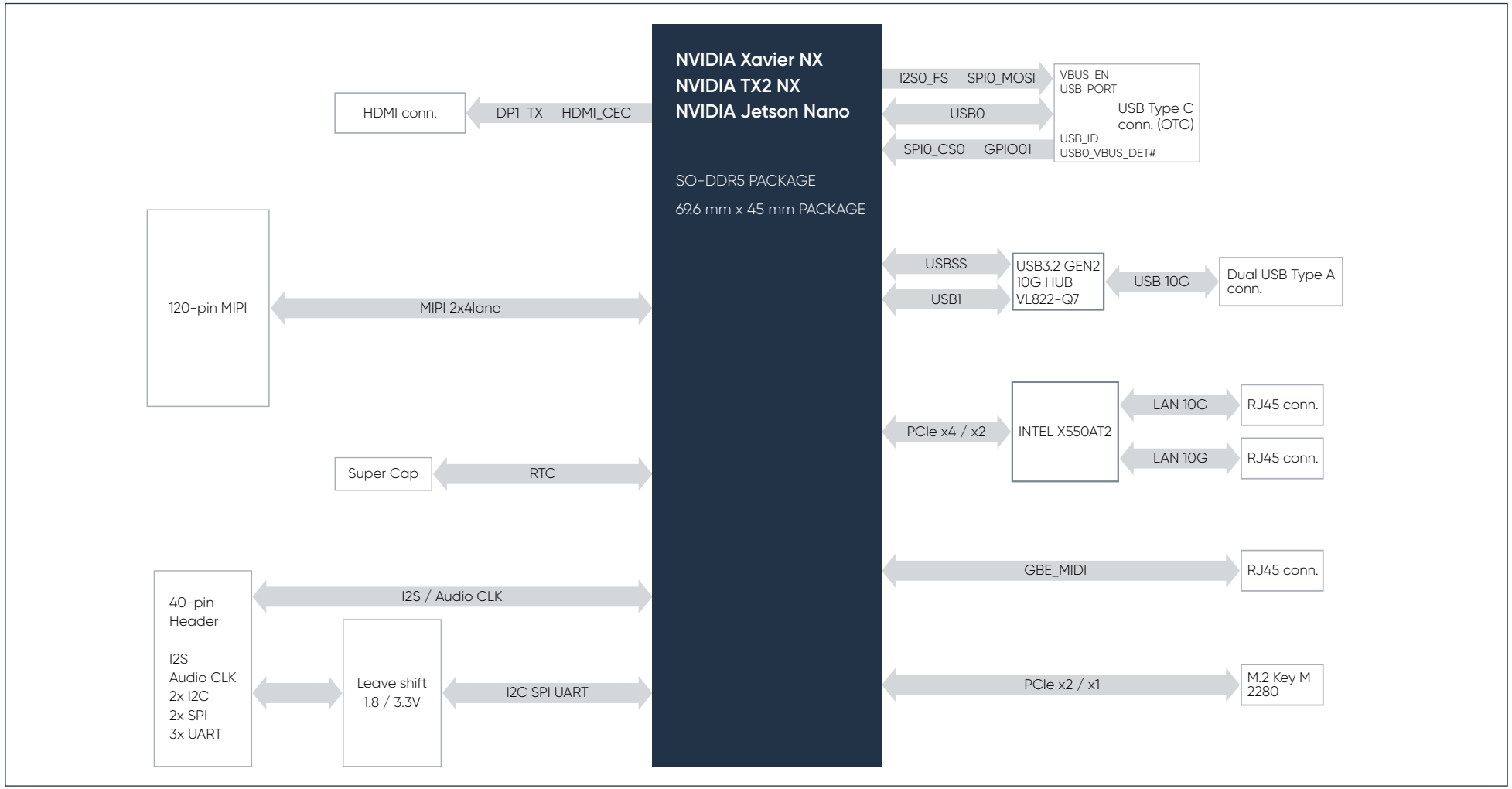
INTERNAL I/O CONNECTORS		**ENVIRONMENTAL**	
I/O	40-pin header (I²S/Audio Clock/2x I²C/2x SPI/3x UART)	Humidity	10 ~ 90% @ 40 °C, (non-condensing)
MIPI CSI	MIPI CSI-2 2 x 4 lane (compatible with Allied Vision adapter board)	Temperature	Operating Temperature: 0 °C ~ +55 °C Storage Temperature: -45 °C ~ 80 °C
POWER		Acoustic	N/A
Input Voltage	9~36 VDC	Shock	N/A
FORM FACTOR		Vibration	N/A
Dimensions	150 mm x 100 mm	Certification	on request
OPERATING SYSTEM		**ACCESSORIES**	
OS	Ubuntu 18.04 (Base on NVIDIA Jetpack 4.6.1)	SYS FAN SINK XAVIER NX	Fan sink only for XAVIER NX
		SYS FAN SINK TX2 NX	Fan sink only for TX2 NX
		SYS FAN SINK NANO	Fan sink only for NANO
		SYS PSU ADAPTER EU SI ME CB	PSU all SI ME CARRIERBOARDS

TECHNICAL DATA.

DIMENSIONS.



TECHNICAL DATA.
BLOCK DIAGRAM.



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