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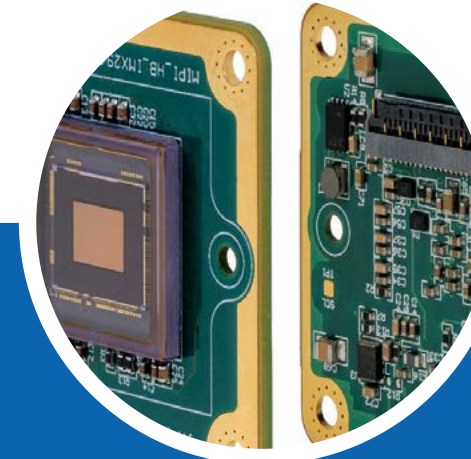
Overview Embedded Vision



NVIDIA® Jetson Orin™ Reference Design
with Carrier Board and Cameras
Scalable Design



NXP i.MX 8M Plus Reference Design
with Carrier Board and Cameras
Scalable Design



Camera Interfaces
MIPI CSI-2, FPD-Link III,
GMSL2

Ready-to-Go Solutions for Automotive, Robotics, Industrial Automation, IoT, Smart Cities and more.

MIPI® CSI-2: High-speed data transmission with minimal latency - ideal for mobile, medical, and smart cities.

FPD-Link™ III: SerDes technology for high-speed data transmission up to 15 m - ideal for automotive and medical applications.

GMSL2: SerDes technology for high-speed data transmission up to 15m – ideal for automotive, robotics and agriculture applications.

Single-Source Solution: Complete reference designs for prototyping and mass production.

The Imaging Source's reference design for NVIDIA including carrier board and NVIDIA Jetson Orin NX SoM delivers powerful image processing via a scalable board design. Powered by NVIDIA's ruggedized processors, this solution brings best performance, industrial grade connectivity and reliability to your embedded vision applications. The reference design is suitable for prototyping and mass production and offers an adaptable and scalable image processing platform, ensuring lean, cost-efficient, and quick development and time-to-market.



The Imaging Source's reference design for NXP, including carrier board and Toradex Verdin i.MX 8M Plus SoM delivers powerful image processing via a scalable board design. Powered by NXP's ruggedized processors, this solution brings industrial-grade connectivity, reliability, and product longevity to your embedded vision applications. The reference design is ideal for both prototyping and mass production, providing an adaptable and scalable image processing platform that ensures lean, cost-efficient, and rapid development, accelerating time-to-market.

With 35 years of experience in machine vision, The Imaging Source offers an extensive range of embedded cameras that are engineered to meet the demands of diverse applications and industries. Our cameras support MIPI CSI-2, FPD-Link III, and GMSL2 interfaces, and utilize the latest sensors from Sony and onsemi to deliver best-in-class image quality and reliability. Designed for state-of-the-art performance, our embedded vision cameras ensure robust imaging for your application, whether in manufacturing, logistics, or healthcare, performing reliably in the most demanding environments.

Affordable processing power, scalable hardware design, advanced software and reduced system footprint have unlocked new possibilities for embedded vision. Discover how The Imaging Source's reference designs including cameras, carrier boards and SoMs support lean hardware design, delivering maximum flexibility and efficiency for your embedded vision projects.



Embedded Vision Reference Designs: **NVIDIA® Jetson Orin™** and **NXP® i.MX8 SoMs** with Carrier Boards

Image Processing Power for Your Embedded Applications

Designed for versatility, The Imaging Source's embedded vision platforms support, single and multi-camera applications via our modular board concept and NVIDIA Orin NX (Nano or AGX) and NXP i.MX 8M Plus SoMs. The integration of our MIPI® CSI-2, FPD-Link™ III, and GMSL2 camera portfolio with robust industrial-grade computing enables precise application development, ensuring efficient turnaround of application-specific design changes that saves development time and costs.



Integration-Ready Embedded Vision

- Resolutions: 0.4 MP - 20 MP
- Interfaces: MIPI CSI-2, FPD-Link III, GSML2
- Latest Sony and onsemi CMOS sensors



Adaptable Hardware Designs for Tailored Solutions

- Optimized costs with lean hardware design
- Optimized performance with custom configurations
- SoM-based design for improved scalability



Rapid Development and Time-to-Market

- Rapid prototyping and development
- Short cycle times for board design changes
- Faster time-to-market



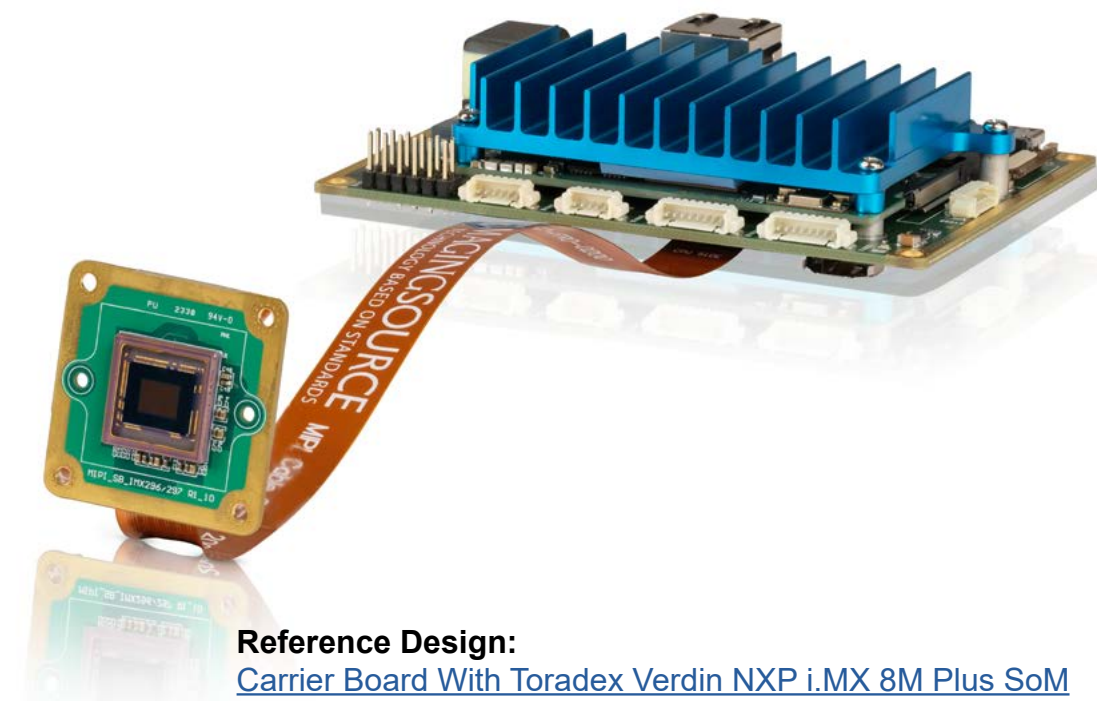
Powerful and Customizable Software

- Image acquisition via TIS and open-source SDKs
- Seamless integration with image processing frameworks like GStreamer, OpenCV, DeepStream (NVIDIA), NNStreamer (NXP)
- Support for MVTec HALCON and more



Reference Design:

[Carrier Board With NVIDIA Jetson Orin SoM](#)



Reference Design:

[Carrier Board With Toradex Verdin NXP i.MX 8M Plus SoM](#)

36 Series

MIPI® CSI-2, FPD-Link™ III, and GMSL2 Cameras

Featuring the latest CMOS image sensors from Sony and onsemi, The Imaging Source's MIPI CSI-2, FPD-Link III and soon-to-be-released GMSL2 camera portfolio offers a variety of global and rolling-shutter sensors in a compact and robust design compatible with many platforms.

36S Series MIPI CSI-2: Single-Board Modules

- Low-latency: Direct sensor-to-processor connection
- 22-Pin Interface: Compatible with most processor boards
- Low power consumption
- Long-term availability



Product Code	MP	Resolution	Format	Pixel Size	Frame Rate	Sensor	Type	Shutter	Color Mono
DxM 36SX297-ML	0.4	720 x 540	1/2.9"	6.9 µm	120 fps	IMX297	Sony Pregius	global	Color Mono
DxM 36SX296-ML	1.6	1140 x 1080	1/2.9"	3.45 µm	60 fps	IMX296	Sony Pregius	global	Color Mono
DxM 36SX462-ML	2.1	1920 x 1080	1/2.8"	2.9 µm	120 fps	IMX462	Sony STARVIS	rolling	Color Mono
DxM 36SX290-ML	2.1	1920 x 1080	1/2.8"	2.9 µm	120 fps	IMX290	Sony STARVIS	rolling	Color Mono
DxM 36SR0234-ML	2.3	1920 x 1200	1/2.6"	3.0 µm	120 fps	AR0234CS	onsemi	global	Color Mono
DxM 36SR0521-ML	5	2592 x 1944	1/2.5"	2.2 µm	30 fps	AR0521	onsemi	rolling	Color Mono
DxM 36SX568-ML	5	2448 x 2048	1/1.8"	2.2 µm	96 fps	IMX568	Sony Pregius	global	Color Mono
DxM 36SX415-ML	8.3	3840 x 2160	1/2.8"	1.45 µm	50 fps	IMX415	Sony STARVIS	rolling	Color Mono
DxM 36SR2020-ML	20	5120 x 3840	1/1.8"	1.4 µm	30 fps	AR2020	onsemi	rolling	Color Mono

Acuva: GMSL2 IP67 Cameras

- SerDes cameras with IP67 housing: Dustproof and waterproof
- Cable lengths up to 15 m
- Long-term availability



Product Code	MP	Resolution	Format	Pixel Size	Frame Rate	Sensor	Type	Shutter	Color Mono
Ac(C/M) 36DR0234	2.3	1920 x 1080	1/2.6"	3 µm	120 fps	AR0234CS	onsemi	global	Color Mono
Ac(C/M) 36DX900	3.1	2048 x 1536	1/3.1"	2.25 µm	117 fps	IMX900	Sony Pregius S	global	Color Mono
Ac(C/M) 36DX568	5	2448 x 2048	1/1.8"	2.74 µm	48 fps	IMX568	Sony Pregius S	global	Color Mono
Ac(C/M) 36DR2020	19.7	5120 x 3840	1/1.8"	1.4 µm	15 fps	AR2020	onsemi	rolling	Color Mono

36C Series FPD-Link III Board Modules

- SerDes technology enables high-speed data transmission up to 15 m
- Expanded trigger and I/O functionality
- Long-term availability



Product Code	MP	Resolution	Format	Pixel Size	Frame Rate	Sensor	Type	Shutter	Color Mono
DxM 36CX297-ML	0.4	720 x 540	1/2.9"	6.9 µm	120 fps	IMX297	Sony Pregius	global	Color Mono
DxM 36CX296-ML	1.6	1140 x 1080	1/2.9"	3.45 µm	60 fps	IMX296	Sony Pregius	global	Color Mono
DxM 36CX462-ML	2.1	1920 x 1080	1/2.8"	2.9 µm	60 fps	IMX462	Sony STARVIS	rolling	Color Mono
DxM 36CX290-ML	2.1	1920 x 1080	1/2.8"	2.9 µm	60 fps	IMX290	Sony STARVIS	rolling	Color Mono
DxM 36CR0234-ML	2.3	1920 x 1200	1/2.6"	3.0 µm	100 fps	AR0234CS	onsemi	global	Color Mono
DFM 36CX390-ML	2.3	1920 x 1200	1/2.6"	3.0 µm	50 fps	IMX390	Sony	rolling	Color -
DxM 36CX335-ML	5.0	2592 x 1944	1/2.8"	2.0 µm	30 fps	IMX335	Sony STARVIS	rolling	Color Mono
DxM 36CX568-ML	5.0	2448x2048	1/1.8"	2.74 µm	30 fps	IMX568	Sony Pregius S	global	Color Mono
DxM 36CX415-ML	8.3	3840 x 2160	1/2.8"	1.45 µm	30 fps	IMX415	Sony STARVIS	rolling	Color Mono

36C Series FPD-Link III IP67 Cameras

- SerDes cameras with IP67 housing: Dustproof and waterproof
- Cable lengths up to 15 m
- Long-term availability



Product Code	MP	Resolution	Format	Pixel Size	Frame Rate	Sensor	Type	Shutter	Color Mono
DxK 36CX297-I67	0.4	720 x 540	1/2.9"	6.9 µm	120 fps	IMX297	Sony Pregius	global	Color Mono
DxK 36CX296-I67	1.6	1140 x 1080	1/2.9"	3.45 µm	60 fps	IMX296	Sony Pregius	global	Color Mono
DxK 36CX462-I67	2.1	1920 x 1080	1/2.8"	2.9 µm	60 fps	IMX462	Sony STARVIS	rolling	Color Mono
DxK 36CX290-I67	2.1	1920 x 1080	1/2.8"	2.9 µm	60 fps	IMX290	Sony STARVIS	rolling	Color Mono
DxK 36CR0234-I67	2.3	1920 x 1200	1/2.6"	3.0 µm	100 fps	AR0234CS	onsemi	global	Color Mono
DFK 36CX390-I67	2.3	1920 x 1200	1/2.6"	3.0 µm	50 fps	IMX390	Sony	rolling	Color -
DxK 36CX335-I67	5.0	2592 x 1944	1/2.8"	2.0 µm	30 fps	IMX335	Sony STARVIS	rolling	Color Mono
DxM 36CX568-I67	5.0	2448x2048	1/1.8"	2.74 µm	30 fps	IMX568	Sony Pregius S	global	Color Mono
DxK 36CX415-I67	8.3	3840 x 2160	1/2.8"	1.45 µm	30 fps	IMX415	Sony STARVIS	rolling	Color Mono