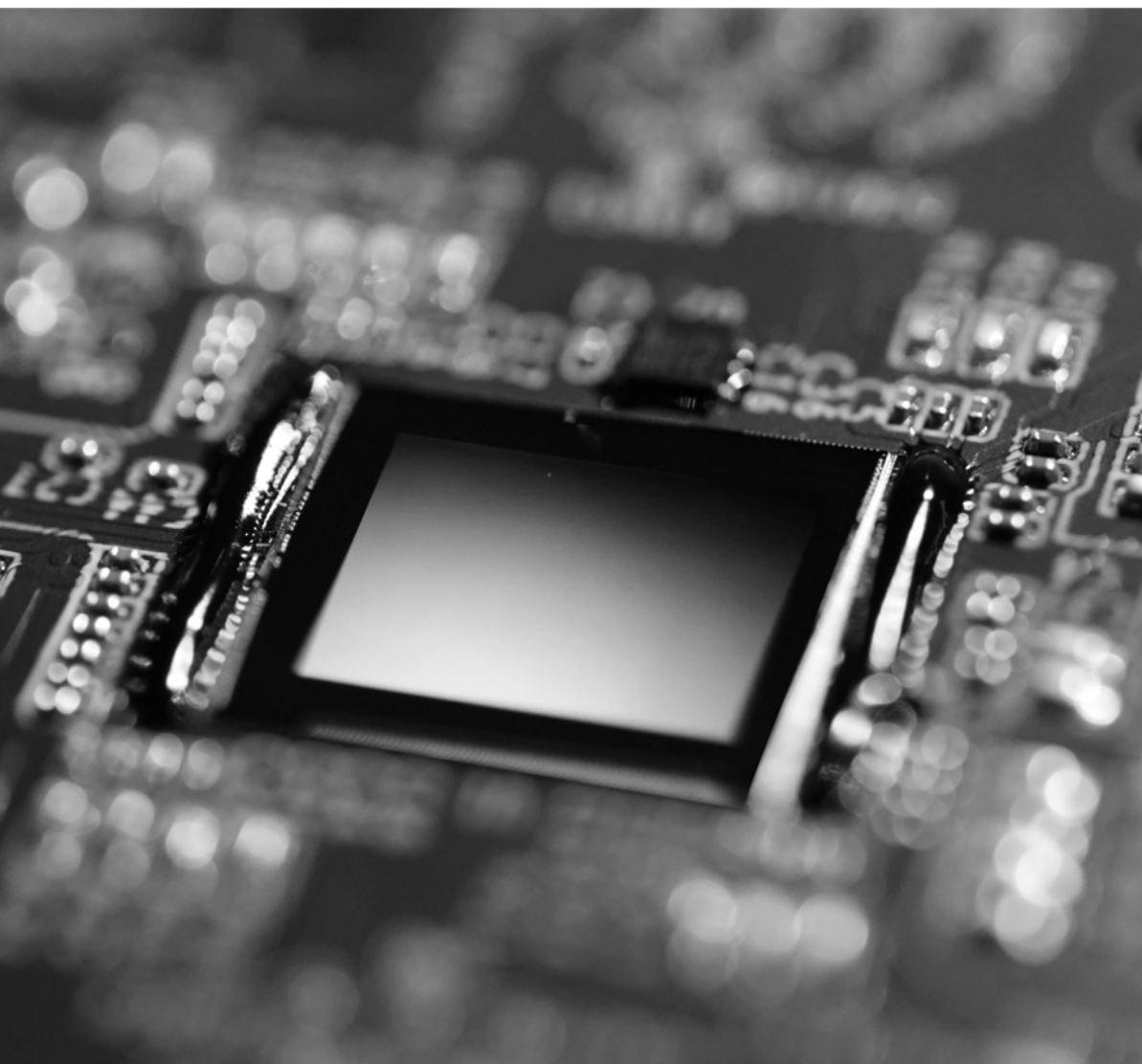


# ISP Solutions

Image Signal Processing IP for Advanced Imaging Applications

SCALABLE CUSTOMIZED SILICON-PROVEN

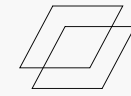
LOW-LATENCY POWER-OPTIMIZED RELIABLE



## ISP ADVANTAGES & FEATURES

### Optimized for Efficiency, Reliability, and Compliance

Dream Chip's ISP is designed for low latency and optimized silicon area, ensuring high performance with minimal resource usage. As a silicon-proven solution, it delivers reliable real-world results while maintaining compliance with ISO 26262 safety standards.



#### Scalable Performance

UP TO 64 MP RESOLUTIONS

120 FPS & 1.3 GIGAPIXELS PER SECOND

DYNAMIC RANGE 12 UP TO 28 BIT

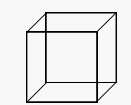


#### Modular Flexibility

CUSTOMIZE / TAILORED FUNCTIONALITY

SPECIFIC PERFORMANCE NEEDS

OPTIMIZED RESOURCE USAGE



#### Proven Reliability

SILICON PROVEN

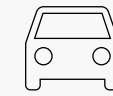
ISO 262626 COMPLIANCE

BIT-TRUE SIMULATION TOOLS

## ISP APPLICATION AREAS

### Application Areas – Where our ISP performs

Our Image Signal Processor delivers outstanding performance across diverse application areas. Wherever reliable quality is essential, our ISP ensures optimal results.

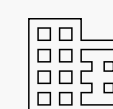


#### Automotive

ASSISTED DRIVING, FRONT & REAR VIEW, 360° TOP-VIEW

DIGITAL VIDEO RECORDING

HUMAN & MACHINE VISION



#### Industrial

AUTOMATION

SECURITY

ROBOTICS, QUALITY CONTROL



#### Consumer

WEARABLES, SPORT ANALYTICS

DRONE CAMERAS, ACTION CAMERAS

SMART HOME DEVICES

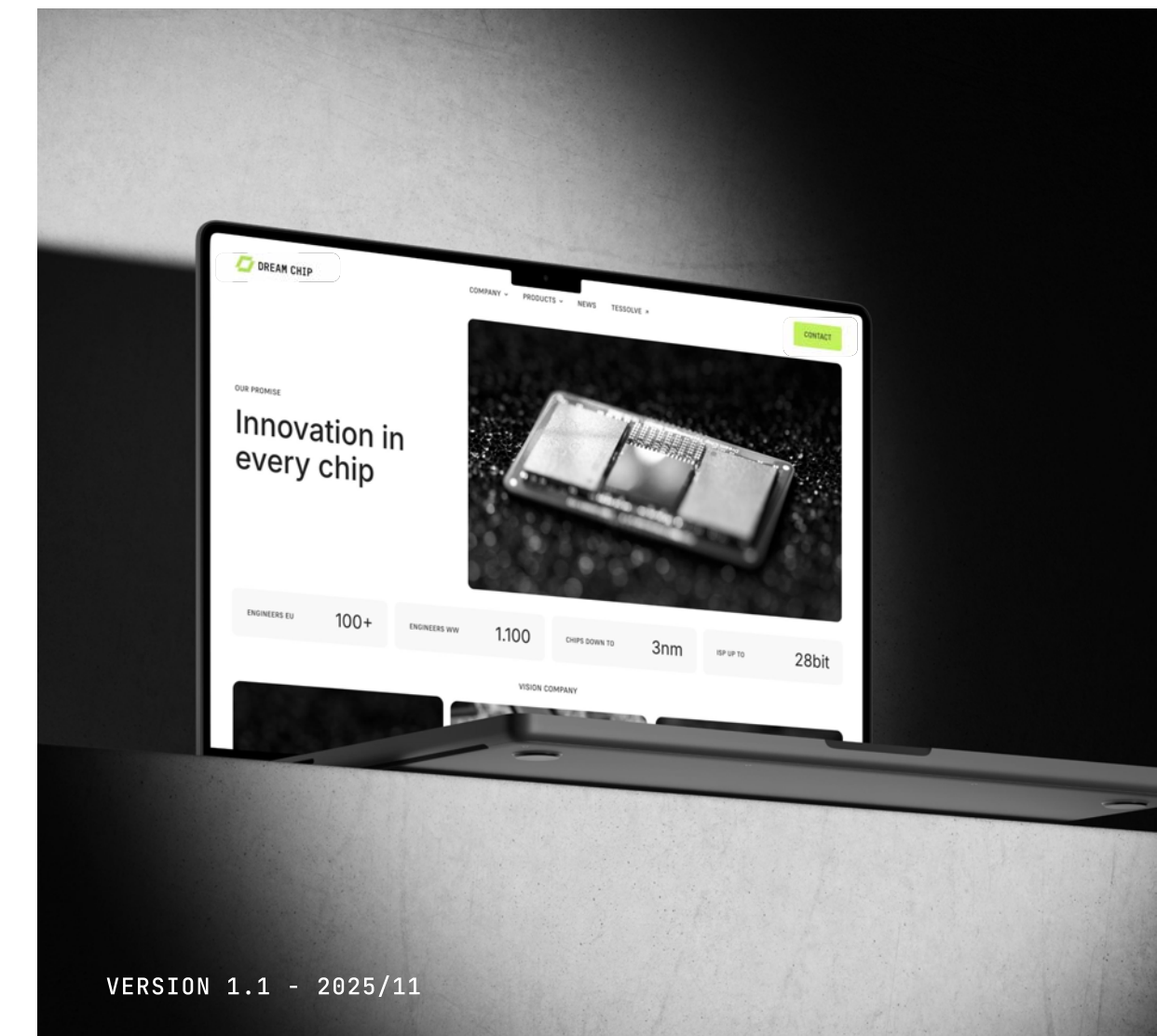
## REACH OUT TO OUR EXPERTS

### Looking for a high-performance ISP solution tailored to your needs?

Let's discuss how Dream Chip can support your project with scalable architecture, cutting-edge performance, and expert customization. Get in touch with our ISP experts today.

[WWW.DREAMCHIP.DE](http://WWW.DREAMCHIP.DE)

[SALES@DREAMCHIP.DE](mailto:SALES@DREAMCHIP.DE)



## At DCT, we go beyond standard ISP solutions...

Dream Chip's ISP is designed with a modular approach, allowing seamless scalability to match a wide range of application requirements. This flexibility enables customers to customize functionality, balancing performance, power efficiency, and silicon area optimization.

With dynamic range from 12 to 28 bits, resolutions up to 64 MP, 120 fps, it delivers high-speed, high-quality image processing. Its adaptable architecture allows new features to be integrated or functions to be optimized, ensuring optimal efficiency, reduced power consumption, and a tailored imaging pipeline.

### Our ISP Series:

Our series are specifically tailored to different application requirements, ranging from area-optimized Standard Dynamic Range (H Series) and Wide Dynamic Range solutions (W Series) to ISO 26262-certified High Dynamic Range processing (X Series) and multi-context switching in Wide Dynamic Range (M Series).

H114

H214

W114

X328

X418

M114

## HDR Premium ISP: Tone Mapping & Advanced Denoising

The X Series represents Dream Chip's flagship High Dynamic Range (HDR) ISP platform with full **ISO 26262 ASIL B certification** for safety-critical automotive applications. Both the ISP-X328 (with dual-frame fusion capability) and ISP-X418 (with enhanced chroma denoising and multi-phase color correction) deliver industry-leading 28-bit processing, providing exceptional image quality in extreme lighting conditions.

#### Highlights:

- Configurable 28-bit input (up to 26 valid bits), supporting resolutions up to 64 MP
- Global and Local Tone Mapping for advanced HDR processing
- ISO 26262 ASIL B certified with integrated safety features
- Support for 2x2 and 4x4 RGB-IR color filter array patterns

#### Ideal for:

- Automotive ADAS applications
- Autonomous driving systems
- Driver & in-cabin monitoring
- High-resolution front & surround view cameras
- Machine vision for automotive
- Safety-critical imaging systems
- Industrial high-dynamic-range applications

## Wide Dynamic Range (WDR) ISP with Multi-Context Switching

The M Series delivers Wide Dynamic Range (WDR) processing with a **multi-context switching capability**, supporting up to 4 independent camera sensors simultaneously. This makes it the ideal choice for applications requiring flexible, multi-camera configurations with efficient resource sharing.

#### Highlights:

- Configurable 16-bit input with multi-sensor support
- Multi-context switching between up to 4 sensors
- WDR tone mapping for enhanced dynamic range
- Memory compression for efficient SRAM utilization

#### Ideal for:

- Surveillance & security (multi-camera systems)
- High-resolution consumer devices
- Wearables with multiple cameras
- Industrial automation
- Factory robotics
- Multi-view applications

## Standard Dynamic Range (SDR) ISP

The H Series represents Dream Chip's scalable and configurable Standard Dynamic Range (SDR) ISP platform, delivering high-quality imaging with **low latency and area-optimized architecture**. While the ISP-H114 is optimized for compact design and human vision applications, the ISP-H214 adds a dedicated Machine Vision output, making it ideal for industrial and robotic vision systems.

#### Highlights:

- Configurable 12-bit input, supporting resolutions up to 64 MP
- Modular pipeline, optional Machine or Human Vision output
- Complete development support with FPGA platforms, calibration tools, and bit-true simulation

#### Ideal for:

- Consumer & wearable imaging
- Industrial automation
- Robotics & machine vision systems

## Wide Dynamic Range (WDR) ISP

The W Series is Dream Chip's Wide Dynamic Range (WDR) ISP solution, optimized for area efficiency while delivering superior image quality in challenging lighting conditions. With 16-bit processing capability and tone mapping, it excels in applications requiring enhanced dynamic range without the complexity of full HDR systems.

#### Highlights:

- WDR tone mapping for enhanced dynamic range imaging
- Low latency design for real-time applications
- Optional extensions for Machine Vision output/multi-input fusion
- Complete development support with FPGA platforms, calibration tools, and bit-true simulation

#### Ideal for:

- Surveillance & security systems
- High-resolution consumer applications, Wearables
- Industrial automation, Factory robotics
- Digital video recording

