
Chips&
Media™

Designing The Future of Video Technology

Chips&Media, Inc. is a global leader in silicon HW IP technology and delivers a wide range of multimedia IPs: video codecs, image signal processors, and deep learning-based computer vision.
Our IPs combine high-performance with minimum power consumption and low bandwidth usage while also remaining cost-effective.

Meet our revolutionary silicon HW IPs :

- **Video Codec**

Extensive catalog of advanced video codec cores to support the media formats you need.

- **Image Signal Processing**

The one-stop, comprehensive image processing solution with optimized gate size and memory usage.

- **Computer Vision**

Real-time, deep learning-based object detection and upscaling super-resolution HW IP.

Area of Business

IP Portfolio

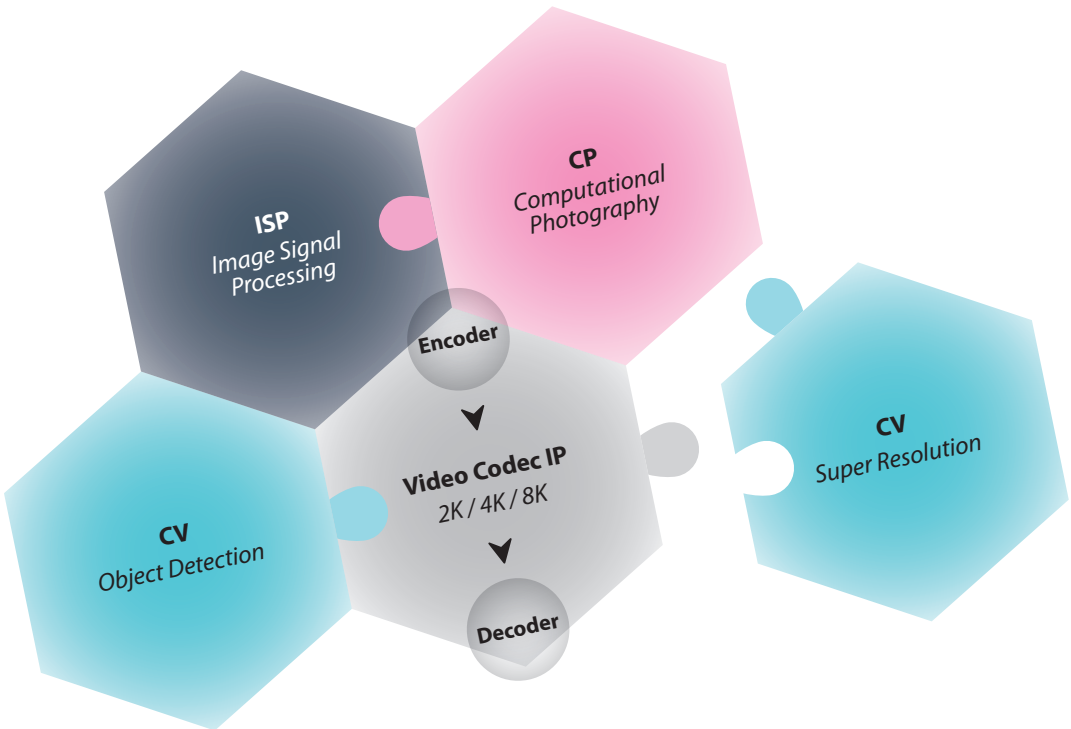
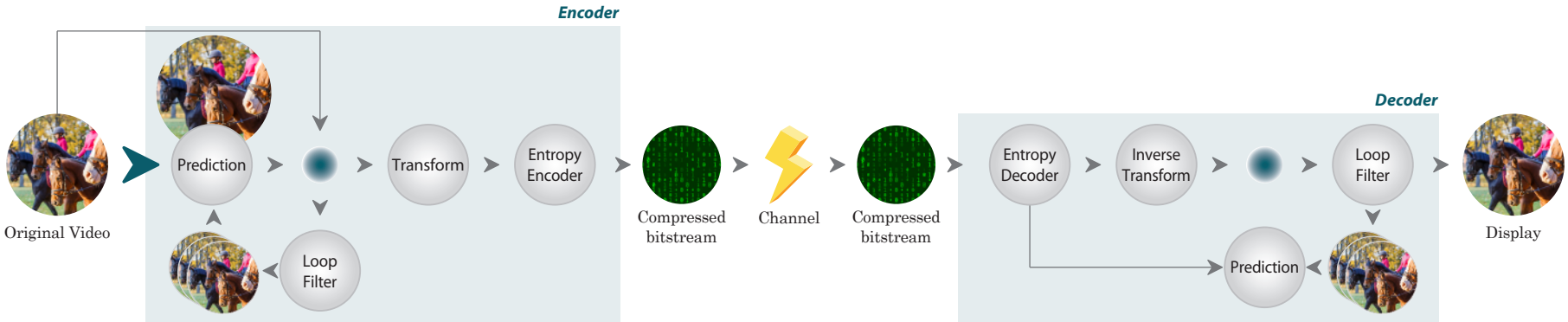


Image Signal Processing

Introducing an end-to-end full-featured ISP IP that converts the sensor's signal into a better visible and processable format while providing user-centric customization for more flexible requirements and configuration capabilities.

Video Codec

Offers diverse compression standards, including AV1, VP9, HEVC, H.264, AVS2, and other legacy codecs, with resolution up to 8K at 60fps for key consumer electronics market.



Delivering the best-in-class video codec IP cores with a compelling and differentiated full IP package of significant high performance, low power consumption, and low bandwidth usage.

● Codec (Encoder&Decoder) / ● Encoder / ● Decoder * Dual Cores

IP Name Up to 8K for UHD	No. of Cores		Video Standard					Bit Depth		Pic Type		Feature	Resolution / Frame Rate
	Single	Dual	HEVC / H.265	AVC/ H.264	VP9	AVS2	AV1	8-bit	8-/10-bit	I/P	I/P/B	3DNR	
WAVE520C	●		●						●		●	●	4K60fps
WAVE521C	●		●	●					●		●	●	4K60fps
WAVE521CL	●		●	●				●		●			4K60fps
WAVE541C		●	●*	●					●		●	●	4K120fps, 8K30fps, 8K60fps
WAVE524C	●		●	●			●		●		●		4K60fps
WAVE520	●		●						●		●	●	4K60fps
WAVE521	●		●	●				●	●		●	●	4K60fps
WAVE521L	●		●	●						●			4K60fps
WAVE524	●		●	●			●		●		●		4K60fps
WAVE541		●	●*	●					●		●	●	4K60fps
WAVE510A	●						●		●		●		4K60fps
WAVE510	●		●						●		●		4K60fps
WAVE511	●		●	●					●		●		4K60fps
WAVE512	●		●		●				●		●		4K60fps
WAVE515	●		●		●	●	●		●		●		4K60fps
WAVE517	●		●	●	●	●	●		●		●		4K60fps
WAVE537		●	●*	●	●	●	●*		●		●		4K120fps, 8K30fps, 8K60fps

Note : Video standards with an asterisk (*) indicates the multi-core solution available in the standard.

IP Name Up to 2K for Full HD	Video Standards										Bit Depth	Pic Type		Resolution / Frame Rate (28nm@500MHz otherwise noted)
	H.264	MPEG-4	H.263	MPEG-2	VC-1	RV	VP8	AVS	AVS+	JPEG	8-bit	I/P	I/P/B	
CODA988 (Encoder)	●	●	●								●	●		2K60fps
CODA988 (Decoder)	●	●	●	●	●	●	●	●	●		●		●	2K60fps
CODA966 (Encoder)	●	●	●								●	●		2K30fps
CODA966 (Decoder)	●	●	●	●	●	●	●	●	●		●		●	2K60fps
CODAJ12										●		●		4:2:2 210M pixel/sec
BODA955	●	●	●	●	●	●	●	●	●		●		●	2K60fps

Download the full list of available video codecs from **www.chipsnmedia.com**

Computer Vision

Super Resolution

Discover the latest innovative fully hardwired deep learning inference super-resolution HW IP that upscales the low-resolution to a high-resolution image in real-time.

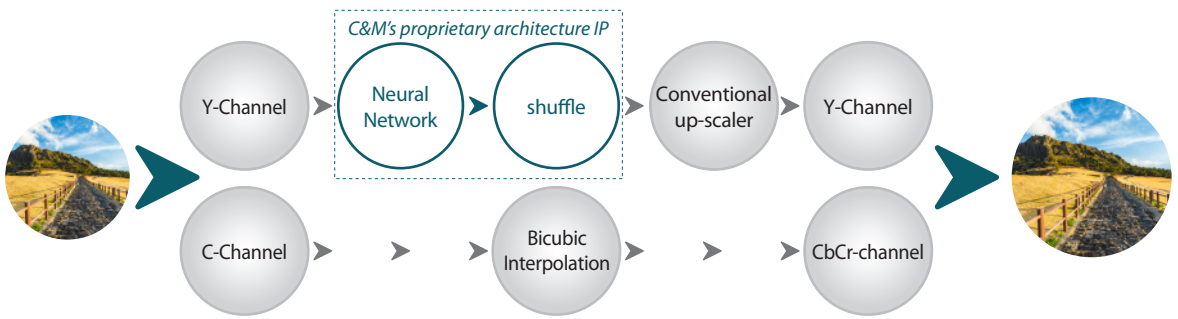
c.WAVE120 is designed and developed for SoC (System-on-Chip), capable of processing 8K (7680x4320) 60fps output images at 550MHz operating frequency.

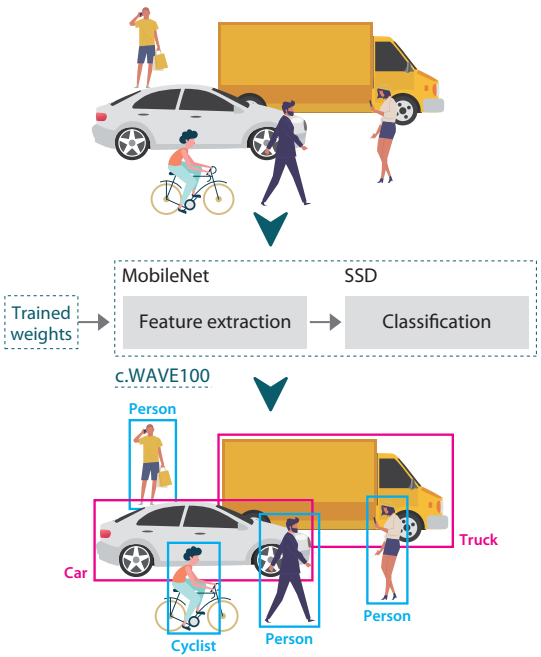
Features

- 8K60fps@550MHz
- Supported scaling ratio
  - x2.0 ~ x8.0 with arbitrary scaling ratio
- Supported On-the-fly and mem-to-mem mode
- No bandwidth required in on-the-fly mode
- Convolutional neural network layers for Y-Channel
  - Features Extraction
  - Constructing HR Image

Deliverables

- Fully verified synthesizable RTL source code
- RTL verification environment
- Programmer's guide
- Datasheet
- Integration, verification guide
- Evaluation platform





Computer Vision

Object Detection

Detect and classify the objects intuitively into configurable categories using anew deep learning-based object detection HW IP, from live or recorded video.

c.WAVE100 is a fully hardwired neural network, capable of processing 2K at 30 fps input in real-time.

Features

- 2K input, 30fps
- Network dedicated Hardware IP
  - Optimized area and bandwidth
  - Pre-layer quantization
  - Dynamic-fixed point representation
  - Fusing layers
- Training framework
  - MobileNet + SSD based object detection architecture
  - Training on customer datasets

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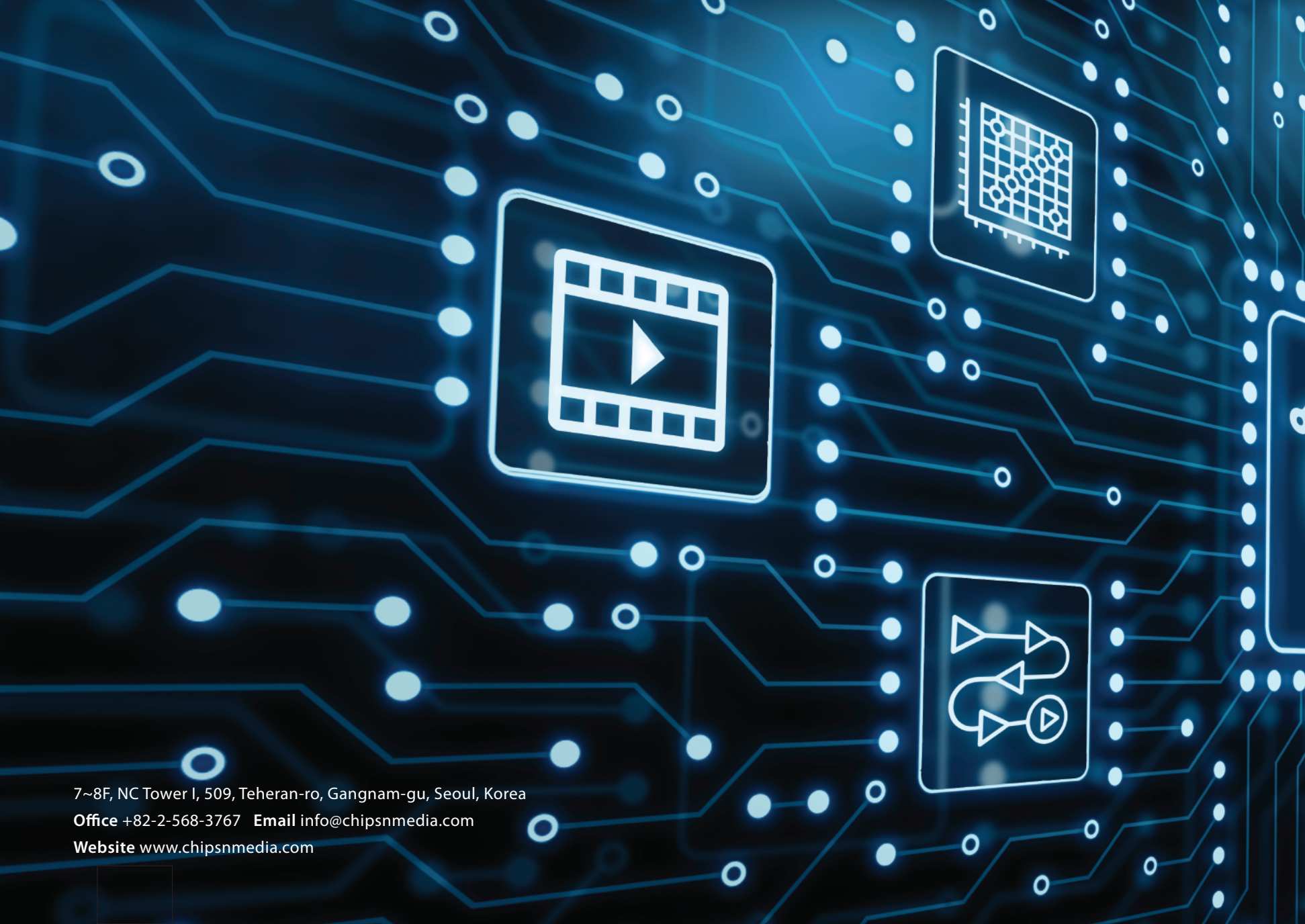

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