



Shenzhen HaiRayVision Technology Co., Ltd.

—Endoscope Video Processing & Decoding Mainboard Series

—High-Tech Enterprise | Medical-Grade ISP Image Processing Expert for UVC Endoscopes—

※Product Model: All-in-One

(7-in-1 UVC Endoscope Image Processing & Decoding Mainboard — Single board compatible with 7 selectable sensors, automatic identification)

Note: 7-in-1 indicates the single board supports 7 optional sensors, not simultaneous output of 7 image channels.

※Product Introduction: (The board supports 7 selectable sensors.)

Supported Sensor Models	Resolution @ Frame Rate	支 Supported Sensor Models	Resolution @ Frame Rate
OV9734 (MIPI Input)	1280*720@30fps	OVM6946 (CVBS Input)	400*400@30fps
OCH01A10 (MIPI Input)	1280*720@30fps	OCHTA10 (CVBS Input)	400*400@30fps
OV2740 (MIPI Input)	1920*1080@60fps	OCHFA10 (CVBS Input)	700*700@60fps
OCHSA10 (MIPI Input)	800*800@60fps	OCHFA20 (CVBS Input)	700*700@60fps
OCH02B30 (MIPI Input)	1500*1500@30fps	SM1618 (CVBS Input)	400*400@30fps
ES101 (MIPI Input)	1000*1000@30fps	SC9197 (CVBS Input)	400*400@30fps



※Product Overview:

All-in-One is a high-performance, micro-power, multi-functional UVC 7-in-1 endoscope image processing and decoding mainboard. It can pre-store configurations for 7 endoscope sensors. When different endoscopes are plugged in, the mainboard automatically identifies the sensor via ID and loads corresponding parameters to render images. As the core ISP image processing component for endoscopes, it features a compact dimension of 70 mm × 48 mm ±0.2 mm. It supports long-distance signal input from sensors: 2–3 meters for MIPI signals and 2–3 meters for CVBS signals. Processed by the advanced onboard ISP image algorithm, image data is transmitted via FPC flexible cable and output to the host mainboard through high-speed USB2.0 interface. It delivers low signal latency and meets EMC test and isolation requirements. Embedding this mainboard into an endoscope image processor host enables compatibility with multiple models and multi-functional rigid & flexible endoscopes.

It supports UVC protocol and OTG function. SDKs and APIs are available for integration with ARM intelligent mainboards, endoscope hosts, mobile phones, tablets and operating systems including Android, Linux, Windows, Ubuntu and iOS, along with comprehensive technical support.

Linked control via GPIO and APP enables one-touch white balance, snapshot and video recording, as well as manual adjustment of parameters such as white balance, exposure, sharpness and brightness. Customization services are offered according to customer functional requirements (e.g., dimming control) and dimensional specifications, including fine image tuning for medical-grade and industrial-grade applications. This product incorporates proprietary patented core technologies. By adopting Haireyang decoding boards, your endoscope products can avoid export restrictions and intellectual property infringement risks. It is widely applied in multi-department medical endoscopes and industrial endoscopes.

※Plug and Play:

Driver-free on Windows, Android, Linux, iOS, and other systems



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※Product Features:

- *7-in-1 Single Board: The single board supports 7 selectable endoscope sensors, covering MIPI / CVBS input with multiple resolutions and frame rates.
- *Automatic Identification: When different sensor models and endoscope types are connected to the same mainboard, the board automatically identifies the hardware and outputs UVC images. Firmware is pre-flashed; no mainboard replacement required.
- *Medical-Grade Image Processing: Low latency, excellent anti-glare and anti-reflection performance. Supports one-touch white balance, snapshot, video recording, dimming, and adjustable parameters including exposure, sharpness and brightness.
- *Cross-Platform Driver-Free: USB2.0 UVC / OTG, compatible with Windows, Android, Linux, iOS and HarmonyOS. SDK and API are available.
- *High Reliability & Customization: Compliant with EMC / ESD and RoHS standards. Supports LED and fiber optic fill-light driving, UVC isolation board, medical/industrial-grade image tuning and custom PCBA services.
- *Eco-friendly product; all manufacturing processes comply with international RoHS standards.
- *Optional matching UVC isolation board available.

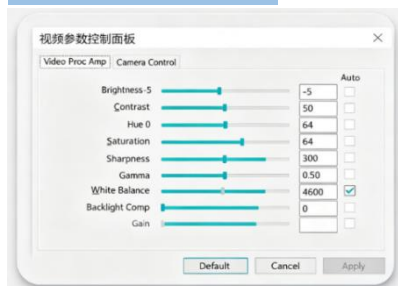
※Service Advantages:

- *Robust full-stack technical service capability covering the complete stages of image processing, hardware and application layers, with SDK and API interface protocols provided.
- *Offers refined medical grade and industrial-grade image tuning & optimization services, together with function and custom PCBA development services.
- *Fast Response: Technical support and sales centers are located in East China (Suzhou) and South China (Shenzhen), providing local support for customers in the Yangtze River Delta and Pearl River Delta regions.
- *With two decades of image processing experience and over ten years as a core supplier of endoscope image processing decoding boards. We have rich experience serving more than one hundred endoscope manufacturers.

※Application Areas:

This product series is a core component for endoscope ISP image processing. It is especially suitable for bronchoscopes, ENT endoscopes, choledochoscopes, gastroscopes, urological endoscopes, pyeloscopes, arthroscopes, spinal endoscopes, neuroendoscopes, electronic rigid endoscopes, electronic flexible endoscopes, hysteroscopes, industrial rigid endoscopes, industrial flexible endoscopes, and many other types of endoscopes.

※Application Display:



※Contact us for the detailed datasheet. Contact person: Mr. Cedar Lee, Telephone: 18576213747 Email: cedarlee@hairayvision.com

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