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SOPHON.TEAM Safety Production Algorithm Integrated Machine

Micro Server SE9 16-BP1-11



TheSafetyProductionAlgorithmIntegration Machine is an integrated software and hardware ecologicalproductjointly launched by SOPHGO and its ecosystem partners. It is specifically designed for the field of safety production and is powered by the robust BM1688 processor. The device comes preloaded with a variety of specialized algorithms tailored for safety production scenarios, effectively ensuring the security of enterprise production, personnel, and equipment assets. It offers one-click deployment for immediate effectiveness, providing customers with the most competitive intelligent solutions.

Specialized Scene Algorithms The device boasts an extensive array of algorithms encompassing three main categories: behavior analysis, object surveillance, and perimeter alert. These can be invoked on demand and freely combined, empowering the management of the five key elements: people, machinery, materials, regulations, and environment.

Convenient and user-friendly secondary development The system allows for flexible deployment in various environments, with the fastest deployment achievable in few minutes.
It supports the RTSP standard protocol, enabling the utilization of existing cameras for seamless upgrades.

Prolific Computing Power
The machine can intelligently analyze up to 16 channels of 1080p high-definition video. Each video channel can support the simultaneous computation of three different algorithms. Multiple functions
The system offers comprehensive management capabilities, including camera management, task management, online preview, and event management. It also provides video transcoding output and event highlight clips. The integration with third-party platforms is facilitated through MQTT/HTTP/GAT1400 protocols, and there is support for the incorporation of third-party algorithms via SDK and API, allowing for flexible expansion. An optional intelligent analysis management platform available, which supports private deployment.

Application Scenarios:



Energy Mining Sites



Industrial Manufacturing



Chemical industrial park



Smart Construction Sites



Safety and Firefighting



Campus Security

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Product Specifications

Processor		BM1688 Processor：8-core ARM CA53 @1.6GHz TPU Compute (INT8): 16 TOPS (17.6 TOPS) • FP32 Compute: 2.2 TFLOPS INT4 Support: 32 TOPS
Operating System		Linux
Video Codec Types		H.264&H.265:1080P@300fps 8K / 4K / 1080P / 720P / D1 / CIF JPEG:1080P@480fps， Maximum support 32768*32768
Data Collection Device		
Parameters	Video Codec	16 channels of high-definition video intelligent analysis, supporting mixed precision operations,int4/int8/fp16/fp32
Safety Production Algorithms	Behavior Analysis	moking detection, safety helmet detection, reflective clothing detection, long-sleeve detection, work uniform detection, climbing detection, person-down detection, personnel absence, personnel sleeping, mobile phone use detection, crowd counting, physical altercation detection, face mask detection
	Object Surveillance	Smoke/fire detection, electric bike detection, channel blockage
	Perimeter Alert	Loitering, area intrusion, line crossing detection, fence climbing, illegal parking (including license plate recognition), small animal detection, personnel count exceeding limit, facial recognition
Software Functions	Abnormal Alarm	When an abnormal situation occurs, early warning and message recording are performed at the same time
	Incident Management	Abnormal events can be uploaded or saved to a designated location, the retention time can be flexibly set, and a review function is provided
	Real-time Preview	Online real-time preview of surveillance video, supporting up to 9 channels of video simultaneously
	Transcoding Output	Support for outputting original video streams via GB28181 protocol; also supports overlaying intelligent analysis boxes on the original video stream for output via GB28181 protocol
Memory	Standard Config	8GB
eMMC	Standard Config	32GB
Interfaces	Ethernet Interface	10/100/1000Mbps adaptive *2
	External Interface	USB3.0 *2 / HDMI2.0 / Audio (in|out) / CAN / RS-232 / RS-485 / TF / GPIO / SATA 3.0
	Power Supply	AC 220V
Working Temperature	Range	-20℃ ~ 60℃(depending on the configuration)
Power Consumption	Typical Value	~18W
Mechanical	Length*Width*Height	219.8mm * 200mm * 46.8mm
Protection Level		Passive cooling IP41