



RK76

Embedded ARM Computer Product Introduction

Project code: AB600

PRO3 team | Jul 09, 2026

Doc rev 1

RK76

Highlight Features

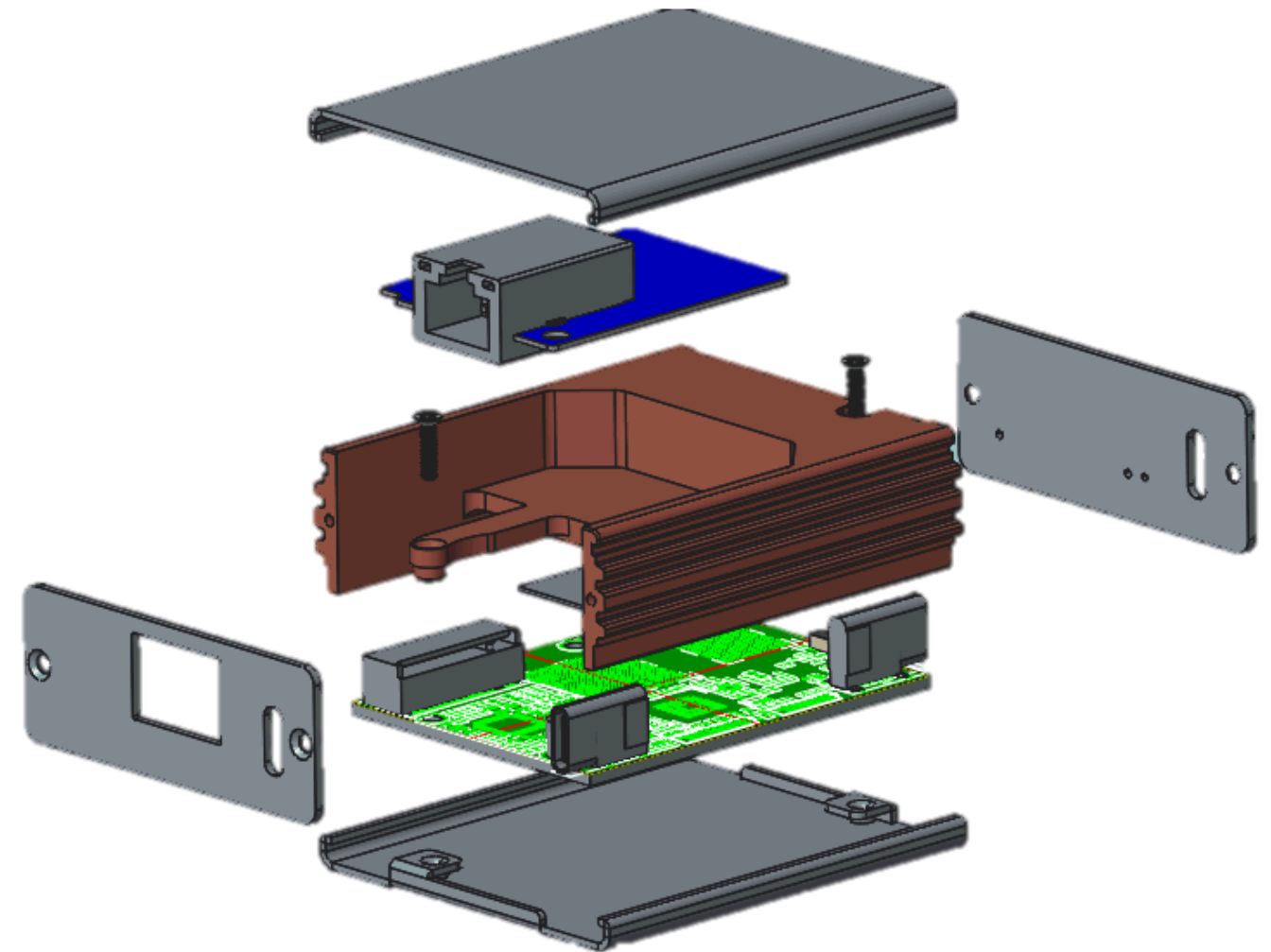
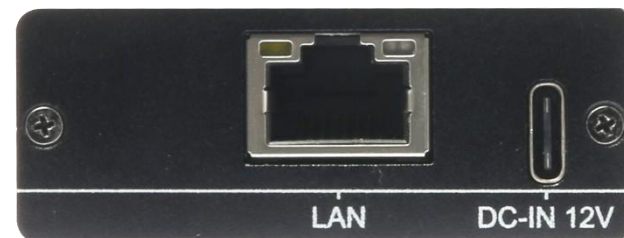
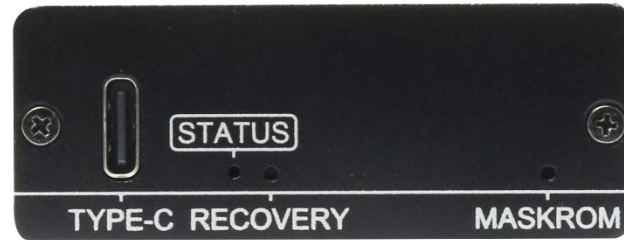
- Ultra power-efficient, high performance embedded edge AI computer powered by Rockchip RK3576 SoC.
- 6 TOPS AI performance for enhanced computer vision.
- Industrial grade fanless metal case for 24/7 operation
- 0.078L ultra compact size for space constraint deployment
- Full-HD display output via USB 3.0 Type-C port
- RJ45 Gigabit Ethernet port
- OS support: Debian Linux, Ubuntu (community support)
- Rockchip software toolchain to convert AI models from popular frameworks like TensorFlow and PyTorch to the proprietary formats
- 10 years product supply life-cycle

Specification	
Processor	RK3576 AIoT SoC w/ Quad Cortex-A72 and Quad Cortex-A53 ARM cores
Integrated GPU	ARM Mali-G52 MC3. H.265, H.264, VP9, AV1, AVS2 decoding up to 4K@120fps. H.264/H.265 encoding up to 4K@60fps
Integrated NPU	Total 6 TOPS (3-core architecture), support INT4/INT8/INT16/BF16/TF32 quantization
System memory	Onboard 4GB, 8GB, 16GB 32-bit LPDDR5
OS Storage	Onboard 64GB, 128GB, 256GB, 512GB eMMC 5.1
Video-out	Full-HD via USB 3.0 RType-C 4K via internal HDMI header
Hi-Speed IO	USB 3.0 Type-C host port
Networking	1x Gigabit Ethernet
Dimension	66.0(W) x 55.8(D) x 21.3(H)mm ³ , 0.078 Litre
Op. Temperature	-20°C - +55°C <i>(t.b.c.)</i>
Power Input	DC 12V Type-C
OS	Support Debian Linux, Ubuntu (community support) Pre-installed Debian 12, kernel 6.1.118
Software Stack	Rockchip: RKNN SDK, RKLLM SDK

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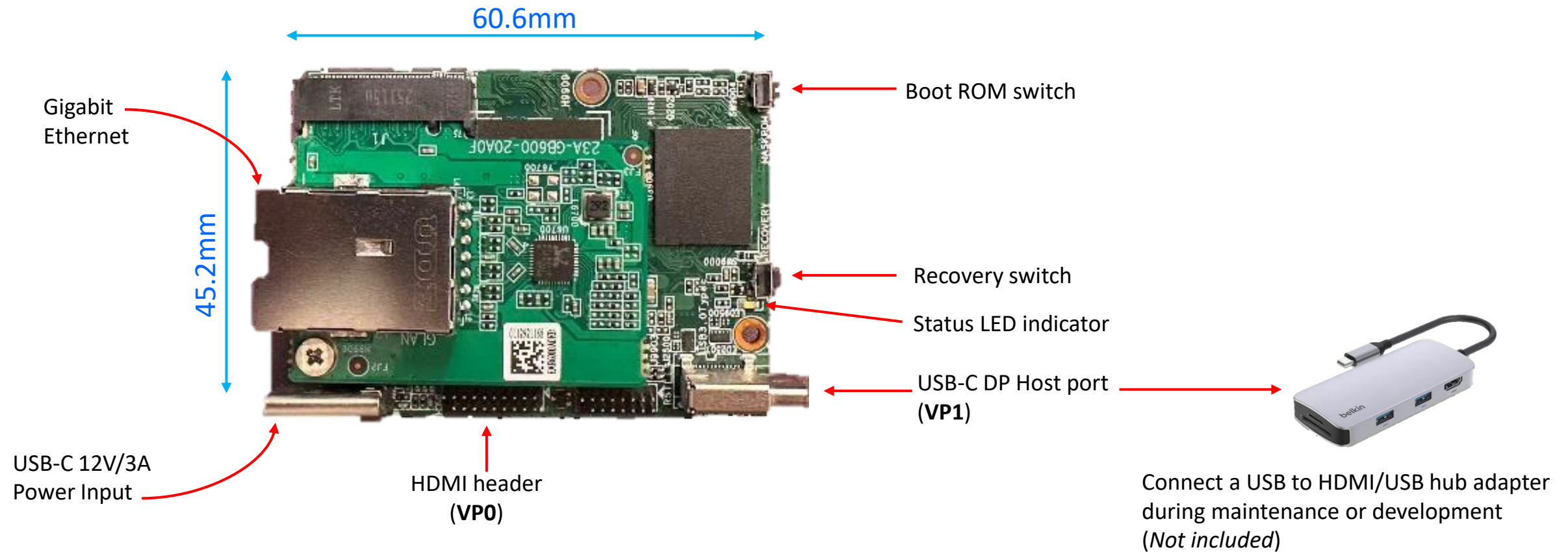
Product Outlook

0.078 Litre

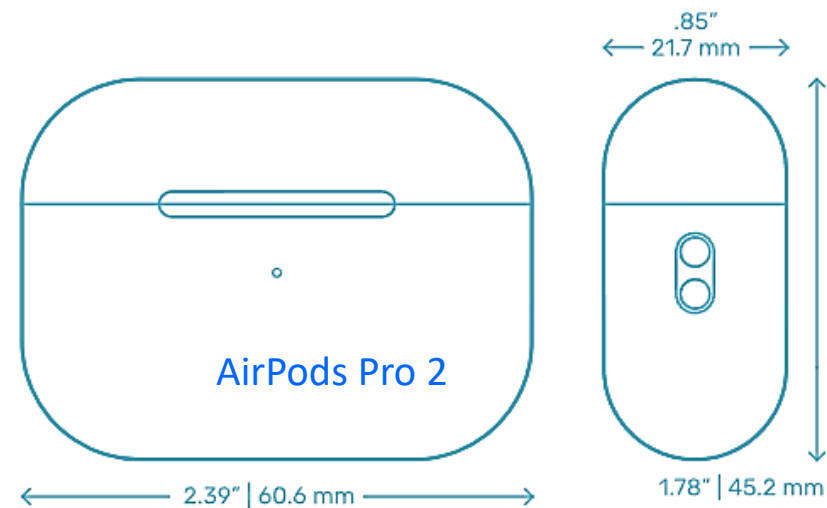


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PCB View



Dimension comparison with the AirPods Pro 2

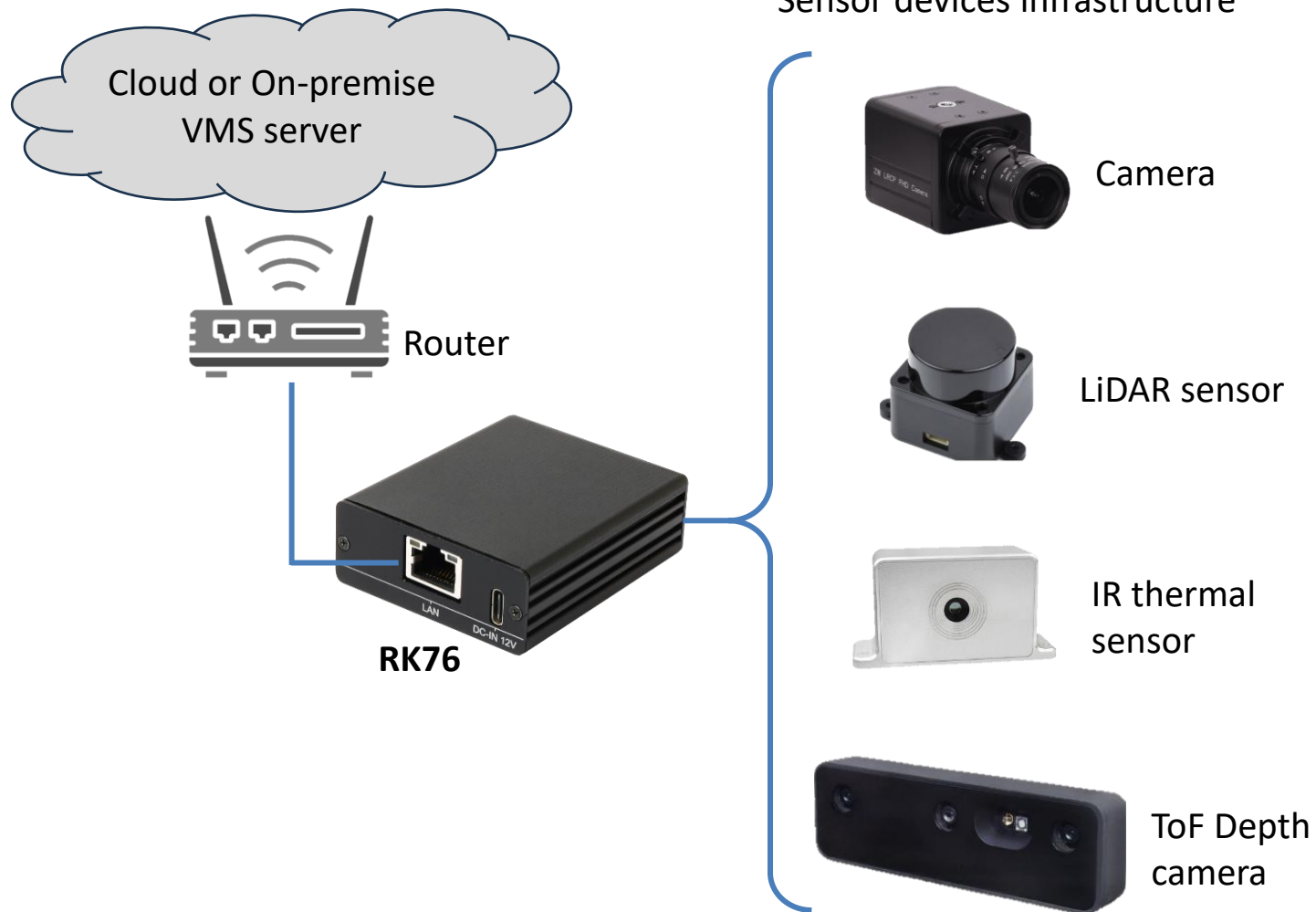


RK3576 Video Port	Maximum resolution	Maximum pixel clock	Video output interface on RK76
VP0	4096 x 2160	1200MHz	Internal HDMI header
VP1	2560 x 1600	300MHz	Not used
VP2	1920 x 1080	150MHz	USB 3.0 Type-C

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Deployment Examples

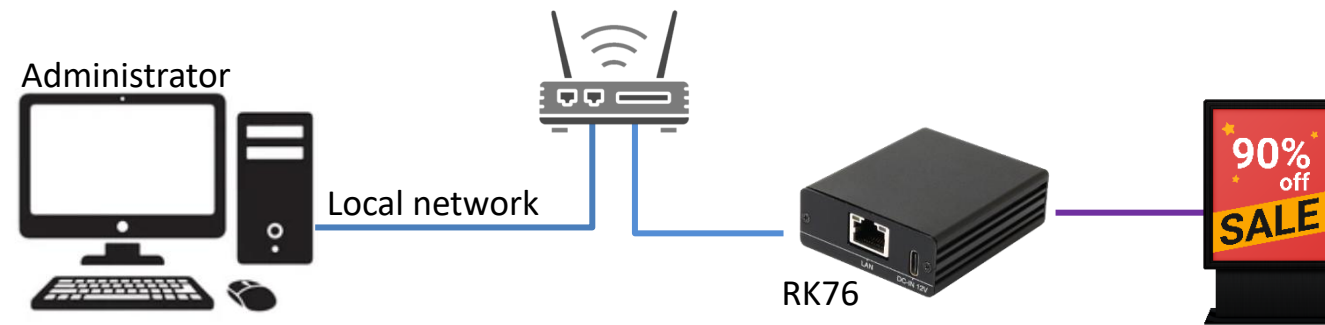
AI Vision Analytics



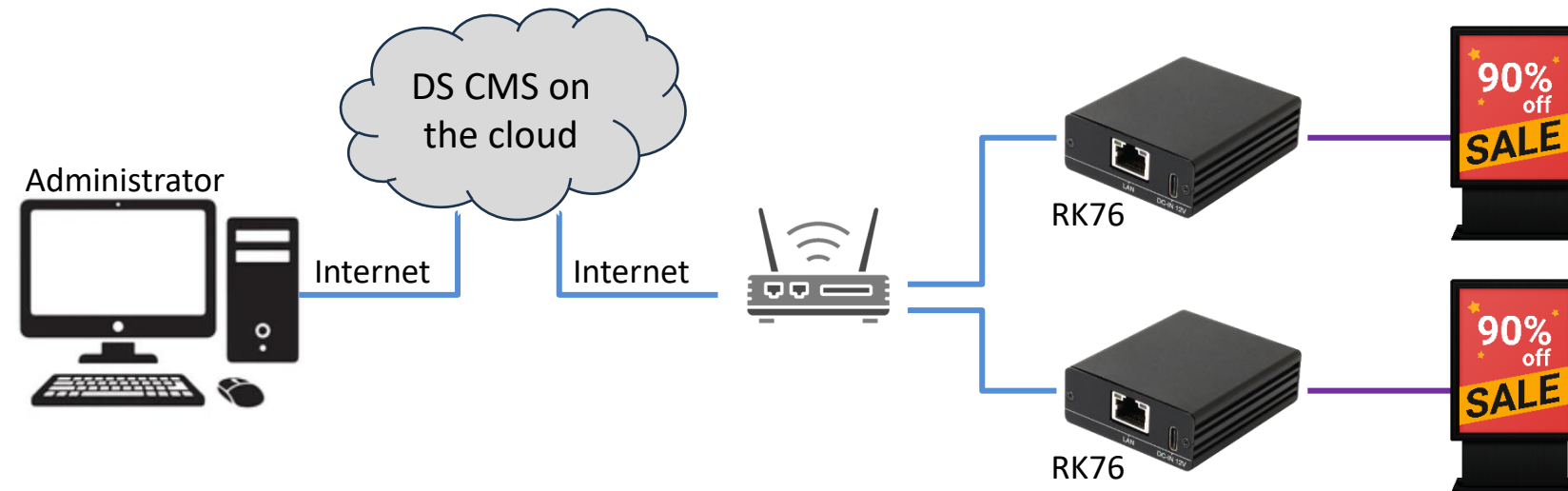
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Deployment Examples

Digital Signage



Standalone with Local Network Update



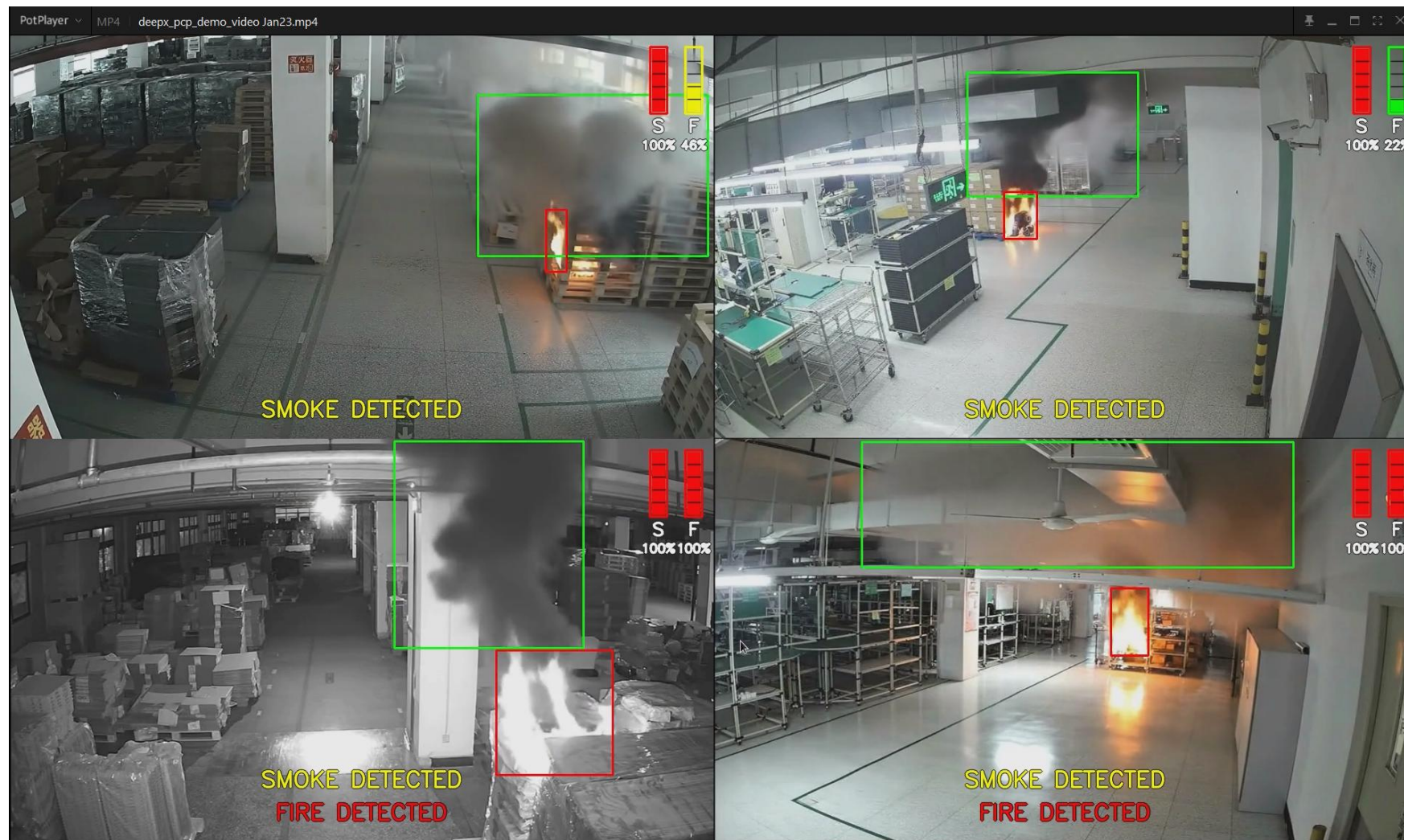
Cloud Content Management



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Application Demo: Video-Based Fire Detection (VBFD)

Key use cases: Multi-camera fire detection in manufacturing facilities, warehouses, Outdoor storage, wildfire & forest surveillance, construction sites, data centers & energy stations, transportation infrastructure.



AI-powered visual detection of fire accidents offers a proactive approach to fire safety, providing significant advantages over traditional sensors by utilizing computer vision to analyze live video feeds for early signs of smoke and flames, integrating with existing traditional CCTV infrastructure.

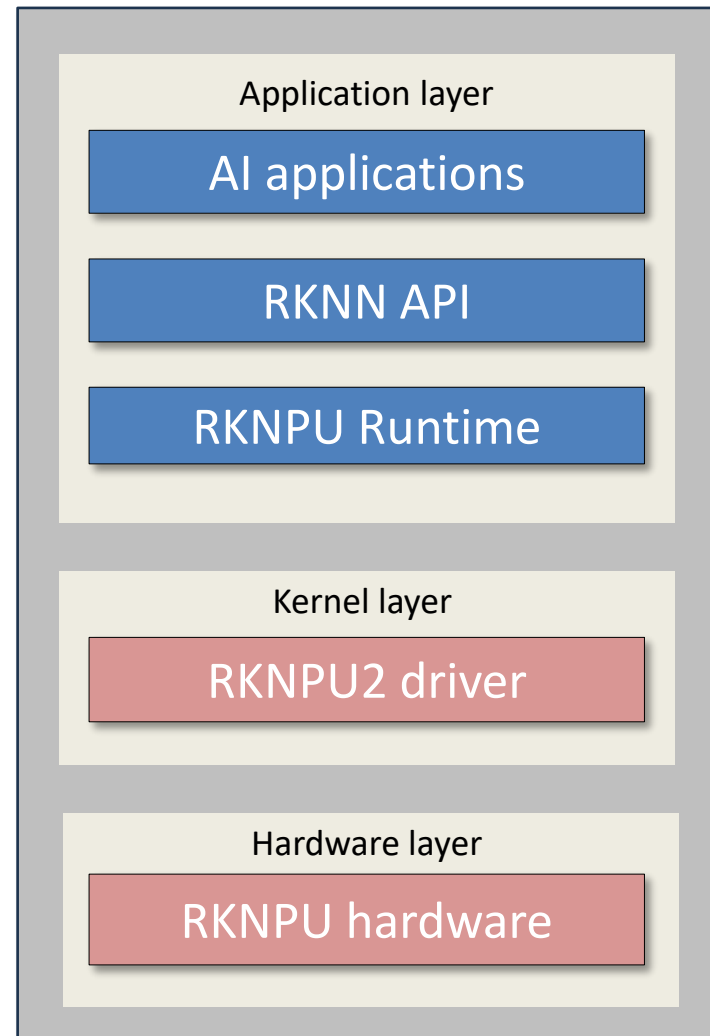
This technology is transforming fire safety by offering faster detection, higher accuracy, and reduced false alarms, particularly in challenging environments.

Features	AI Video Analytics	Traditional fire detector
Detection Speed	1–30 seconds (fast)	3–6+ minutes (slow)
Detection Basis	Visual confirmation (smoke/flame)	Heat/smoke reaches sensor
Coverage	Large, open, or high-ceiling areas	Limited to specific zones
False Alarms	Very low	High (dust, steam, cooking)
Information	Real-time video/exact location	Basic alert

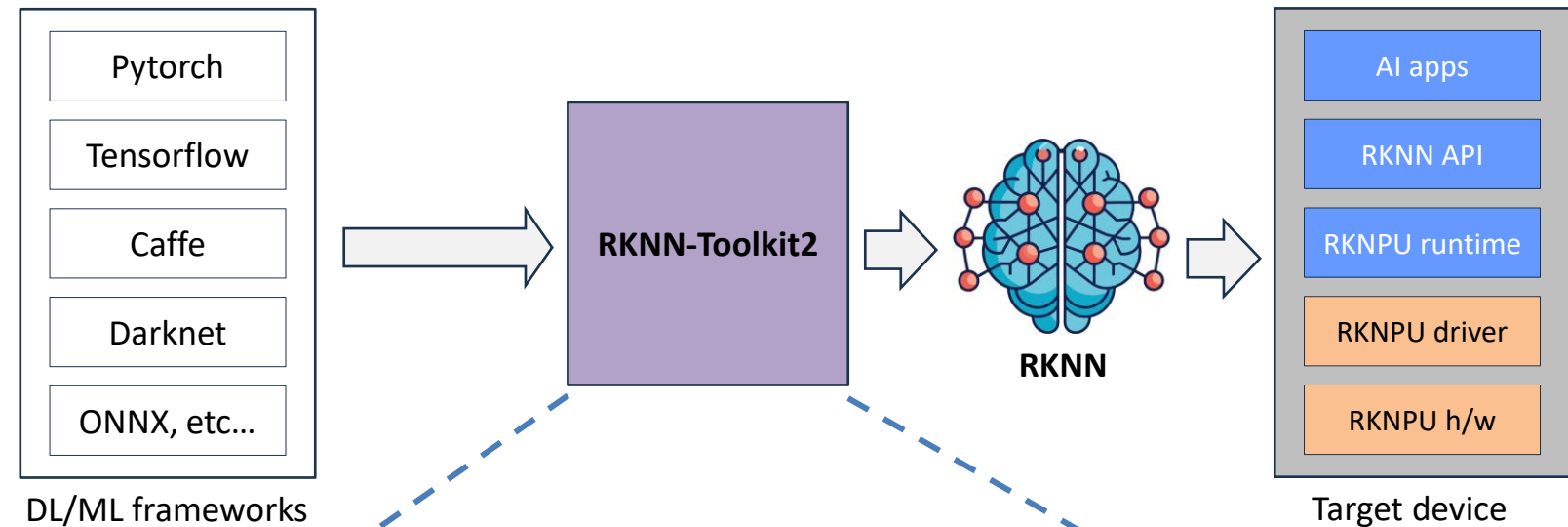
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Rockchip RKNN Software Stack Introduction

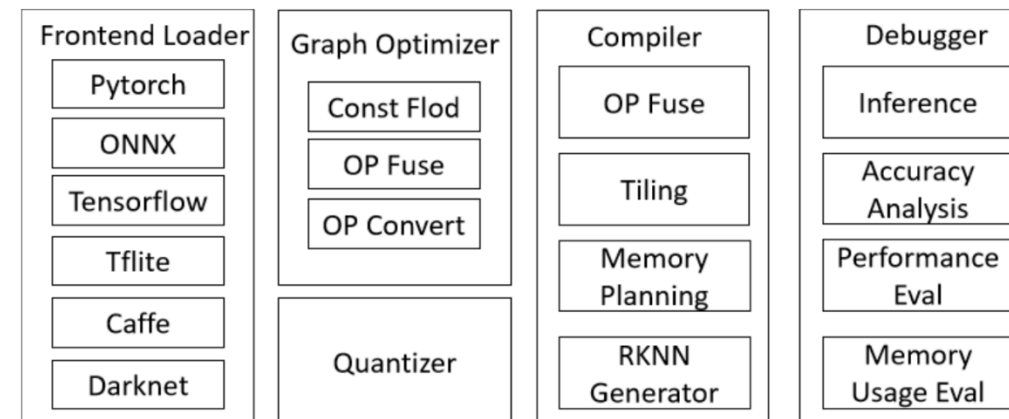
AI Device on the Edge



RKNN (Rockchip Neural Network) toolchain overview



RKNN-Toolkit2 block diagram

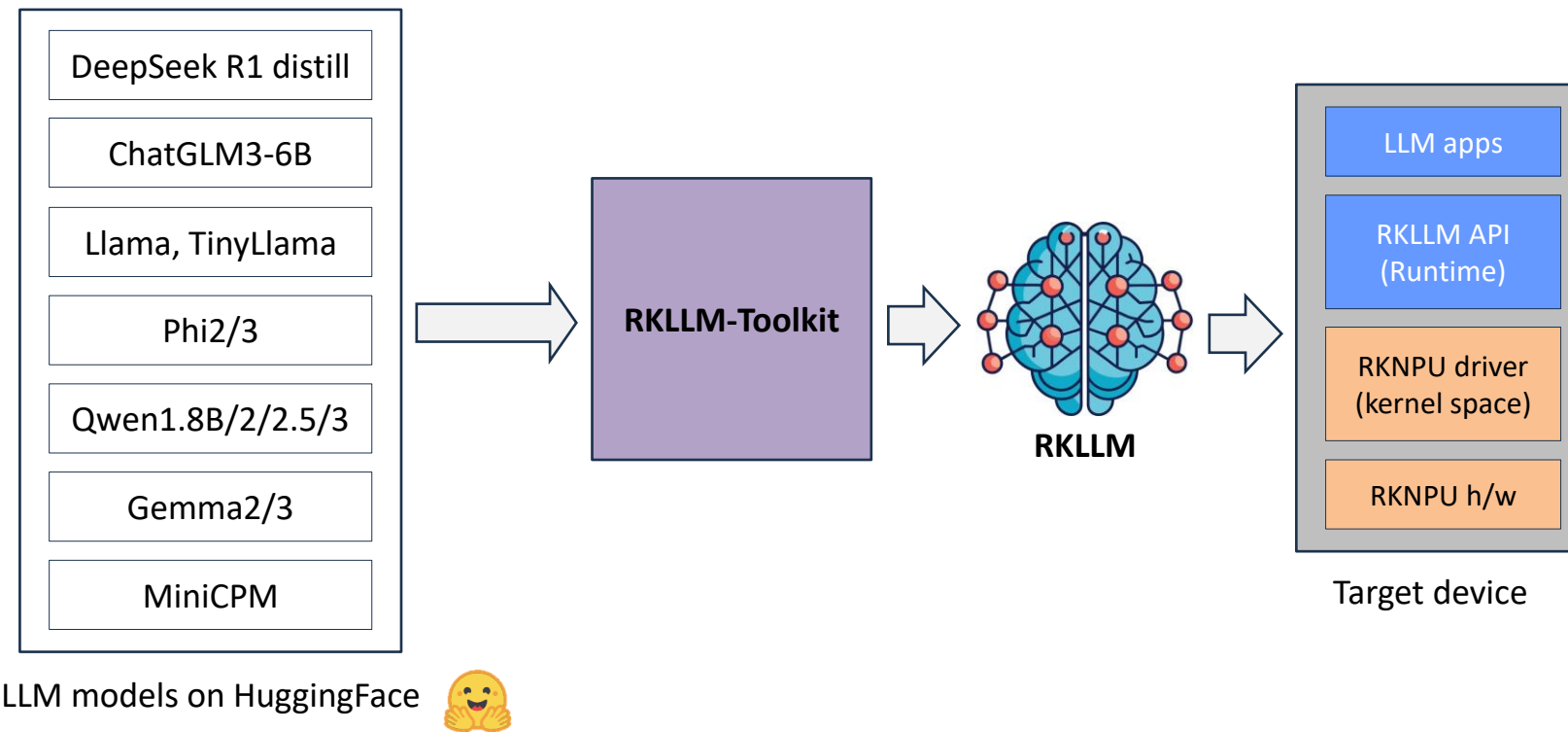


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RKLLM Software Stack Introduction

RKLLM (Rockchip Large Language Model) toolchain overview



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Product model name & Configurations

Base model	LPDDR5 (315-ball)	eMMC	Bundle AC adapter	AC plug
EMB-RK76	4GB	64GB	None	None
	8GB	128GB	30W Type-C	US
		256GB		EU
		512GB		UK
				AU



Available Ordering Part Number

SKU	BOM	Description	Power Adapter
EMB-RK76-A0	250-AB600-000EB	EMBEDDED PC RK3576 , LPDDR5 8GB , EMMC 128GB , USB-C 3.0, GbE	Not included
EMB-RK76-B0	250-AB600-001EB	EMBEDDED PC RK3576 , LPDDR5 4GB , EMMC 64GB , USB-C 3.0, GbE	Not included

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