LIPSAMR™ Perception DevKit V1.0.0 Technical Spec

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Aug 2024

Contents

Revision History

Revision	Description	Date
1.0.0	The initial release of the internal version	2024 / 8 / 20

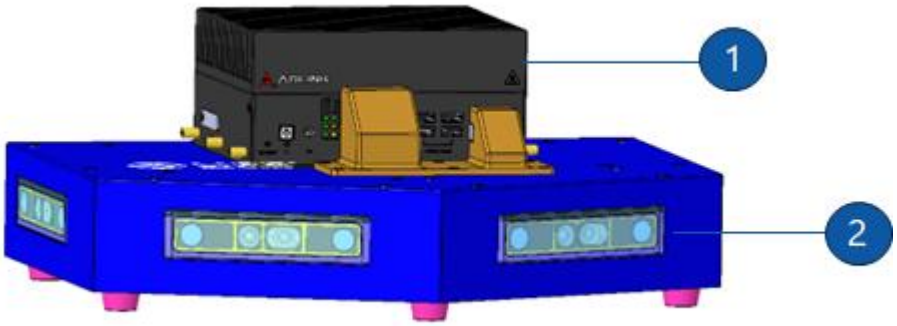
1. Overview

The LIPSAMR™ includes NVIDIA Jetson AGX Orin SOM, AGX Orin carrier board, and 4x AE470. It combines LIPS's expertise in robotic mobility solutions with NVIDIA AI and GPU-accelerated computing.

1.1 Packing List

The packing list is a reference for users to check the package content. If anything is missing, contact info@lips-hci.com.

No.	Items	Functions
1	IPC	1 x Jetson Orin AGX 64G.
2	LIPS Depth Camera	4 x AE470.

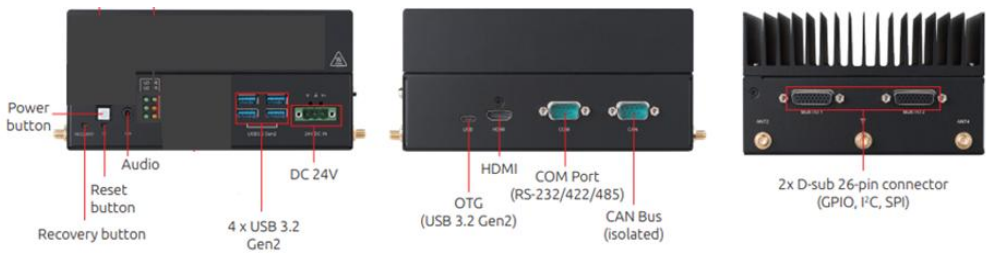


2. Technical Spec

The LIPSAMR® Perception DevKit combined Depth camera and Nvidia Jetson Orin AGX. Please find the detail specific below:

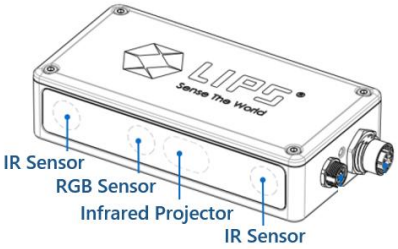
2.1 IPC Spec

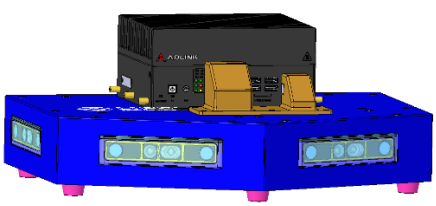
Model	Jetson AGX Orin 64GB
System Core	
GPU	NVIDIA Ampere architecture with 2048 NVIDIA® CUDA® cores and 64 Tensor Cores
CPU	12-core Arm® Cortex®-A78AE v8.2 64-bit CPU 3MB L2 + 6MB L3
RAM	64GB 256-bit LPDDR5
Storage	64GB eMMC 5.1
SSD	512GB, Temp.-25°C to +85°C M.2 2280 PCIe Gen3x4
OS	Linux(Support Jetpack6)
I/O Port	
Button	1x power, 1x reset, 1x recovery
HDMI	1x HDMI (Max. resolution 3840x2160 @ 60Hz
USB	4x USB 3.2 Gen2 Type-A 1x USB 3.2 Gen2 Type-C (OTG)
Audio	Mic-in, line-out
I/O Connector	2x D-sub 26-pin connector (GPIO, I2 C, SPI)
Serial Port	1x COM RS-232/RS-422/RS-485 (DB9)
CAN Bus	1x 2.0b, isolated (DB9)
Extension	
Wifi6	Wi-Fi 6 / BT M.2 Type 2230 Combo Modul
Power Requirements	
DC Input	24V (OVP,OCP)
AC Input	160 up to 220W power adapter
Power switch	1x Power ON/OFF Button (AT/ATX , Default : AT)
Environmental	
Operating Temperature	Standard -20°C to 55°C with Air Flow 0.6 m/s (system level), -25°C to 85°C (board level)
Operating Humidity	~95% @40°C



2.2 Camera Spec

Camera	AE470
Description	
Image Sensor	Omni Vision OV9782
Pixel Size	3μm * 3μm
Optical Format	1 / 4”
Active Pixels	1280 * 800
Video Forma	10-bit RAW RGB
Maximum Aperture	f / 2.0
Focal Length	1.93 mm
Focus Type	Fixed
Shutter Type	Global shutter
Distortion	<= 1.5 %
IMU Senso	3-axis accelerator & 3-axis gyroscope
Illumination	
Illumination Type	Infrared
IR Wavelength	850 nm ± 10 nm
Pattern Type	Static
Illuminating Component	Vertical-cavity surface-emitting laser (VCSEL) + Optics
Output	
Ethernet Interface	Gigabit Ethernet
Image Depth	
Technology	Active Stereo
Baseline	95 mm
Max Working Distance	Up to 10 m (Note: Beyond 10 meters, accuracy may vary)
Min Working Distance	0.52 m
Resolution	1280 x 720 @ 30 FPS
Single Camera FoV (H * V)	87 * 58 (± 3)
Multi Camera FoV(H * V)	270 *58 (± 3)
Z Accuracy	Under 2% of distance at 4m
Image RGB	
Resolution	1280 * 800 @ 30 fps
FoV (H * V)	90 * 65 (± 3)





2.3 Dimension Spec

Coming Soon.

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