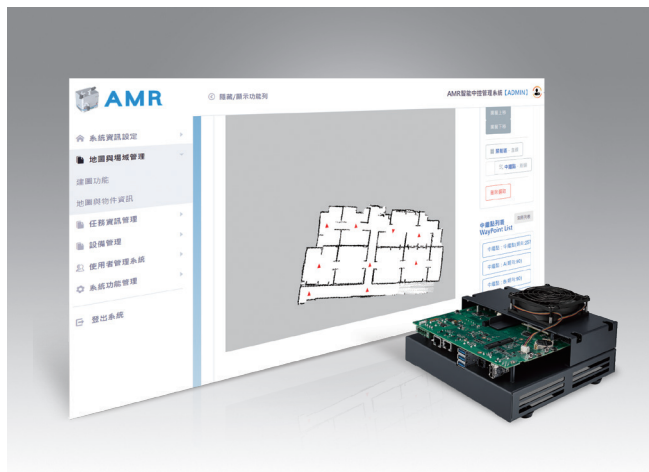


ISP-MIC732-AMRA1

An Integrated Software and Hardware AMR Solution of NVIDIA Isaac Perceptor



Features

- Leverages Nova Orin Developer Kit based on the NVIDIA® Jetson AGX Orin™ with JetPack 6.0 or later.
- Isaac Perceptor comes with pre-integrated, extensively tested subgraphs for mobile robots, ensuring seamless integration with existing software stacks and robots.
- Incorporates NOVA Orin support, facilitating enhanced AI processing for edge computing in industrial applications.
- Built on the open-source ROS 2 (Robot Operating System) software framework. Providing advantage of NVIDIA-accelerated libraries and AI models to accelerate their AI robot development and deployment workflows.
- Suitable for routine, human-power-intensive tasks in fields such as smart warehousing, precision agriculture, retail maintenance, high-efficiency manufacturing, and logistics.

Description

Integrated System Packages (ISP) are AI platforms based on NVIDIA® Jetson Orin™ series, with pre-install SDKs compatible with JetPack 6.0 and above. These ISPs integrate hardware and software, allowing users to develop applications more quickly than before. After powering on the device, users can follow the ISP setup SOP to complete steps such as booting, installation, and activation. The software's recognition accuracy can be fine-tuned according to different application scenarios, enabling rapid deployment of edge AI.

This ISP Equipped with 8 GMSL FAKRA connector, cameras, the system enables robots to achieve 360-degree vision, crucial for real-time situational awareness and decision-making. Integrates with 3D LiDAR driver for precise depth perception, facilitating navigation in complex environments. Complemented by 2D LiDAR, it captures fine details on surfaces to enhance sensing capabilities.

Specifications

System Platform		MIC-732D-A06A1
Processor System	CPU	12-core NVIDIA Arm® Cortex A78AE v8.2 64-bit CPU, 3MB L2 + 6MB L3
	GPU	2048-core NVIDIA Ampere GPU with 64 Tensor Cores Maximum Operating Frequency: 1.3GH
	Memory	64GB 256-bit LPDDR5 DRAM
I/O	Ethernet	1 x 10/100/1000/2500 Mbps 1 x 10GbE
	Display	HDMI (Max. resolution 3840x2160 @ 60Hz)
	USB	3 x USB 3.2 Gen 2, 2 x USB micro B Internal: 1 x USB 2.0 (pin header)
	CAN	2 x CANBus
	Serial Ports	2 x RS-232/422/485 (On-board pin header)
Power	Mode	AT/ATX (Default AT)
	Input Voltage	9-36VDC, Rated 12VDC
Environment	Operating Temperature	-20 ~ 60 °C with 0.7 m/s air flow
Mechanical	Dimensions (W x D x H)	191 x 209 x 112 mm (with fan)
	Weight	1.5 kg
	Installation	Desktop / Wall mount
Certifications		CE/FCC
BSP		Above JetPack 6.0
Build-in SDK	Isaac Perceptor	A camera-based 3D perception system for mobile robots. It provides robust odometry together with local 3D scene reconstruction to enable autonomous navigation applications
	Nvblox	Integration for local 3D scene reconstruction and mapping, processes depth and pose to reconstruct a 3D scene in real-time and outputs a 2D costmap for Nav2
Demo Scenario		perceive, localize, and operate in unstructured environments

Specifications (Cont.)

Functions	Offered Capabilities	<ul style="list-style-type: none"> ▪ Isaac ROS Nova for time-synchronized multi-cam data ▪ Isaac ROS Visual SLAM for GPU-accelerated camera-based odometry ▪ Isaac ROS Depth Estimation for learning-based stereo-depth estimation ▪ Isaac ROS Nvblox for GPU-accelerated local 3D reconstruction ▪ Isaac ROS Image Pipeline for GPU-accelerated image processing ▪ AMR performance monitoring and profiling ▪ Cleaning mission for hospital environment ▪ Native bot-callable functions and agent tools ▪ Extensible plugins with auto-generated UI controls ▪ Save, load, and export map and mission presets
Latest Version		Ver 1.0

Ordering Information

P/N	Description
ISP-MIC732-AMRA1	AI Developer Kit Based on NVIDIA® Jetson AGX Orin™ 64GB, JetPack 6.0, with 8-port GMSL Video Capture Card, pre-install Isaac Perceptor

Accessories

P/N	Description
96PSA-A150W19P4-4	Adaptor A/D, 100-240V, 150W, 19V
1702002600	Power Cord (USA) UL/CSA, 3-pin, 10A, 125V, 1.83 M, 180 D
1700029019-01	Power Cord (PSE/BSMI), 3-pin, 7A, 125V, 1.8 M, DAC-ST01
1702002605	Power Cord (EU) 2-pin, 10/16A, 220V, 1.83 M, 90 D

NVIDIA Nova Orin Sensor Approved Vendor List

Sensor Type	Sensor Name	I/O	Part Number	Manufacturer	Details	HFOV	VFOV
Stereo Camera	Front/ Rear/Left/ Right Stereo	GMSL2	Hawk LI-AR0234CS-STEREO-GMSL2	Leopard Imaging	2.3 MP RGGB	121.5	73.5
Fisheye Camera	Front/ Rear/Left/ Right Fisheye	GMSL2	Owl LI-AR0234CS-GMSL2-OWL	Leopard Imaging	2.3 MP RGGB	202.0+/-3	127.2+/-2
2D Lidar	Front/Back 2D Lidar	Ethernet	RPLidar S2E	Slamtec	10 Hz 0.12 deg resolution 0.05-30m range	360	-
3D Lidar	3D Lidar	Ethernet	XT32	Hesai	5-20 Hz 0.09-0.36 deg resolution 0.05-120m range	360	31(+15/-16)

Approved Vendor List by [NVIDIA Nova Carter Docs](#).