ASR-A701DVK Series

ASR-A701 with GMSL Camera Solution
Accelerated by NVIDIA® Jetson Orin™ NX
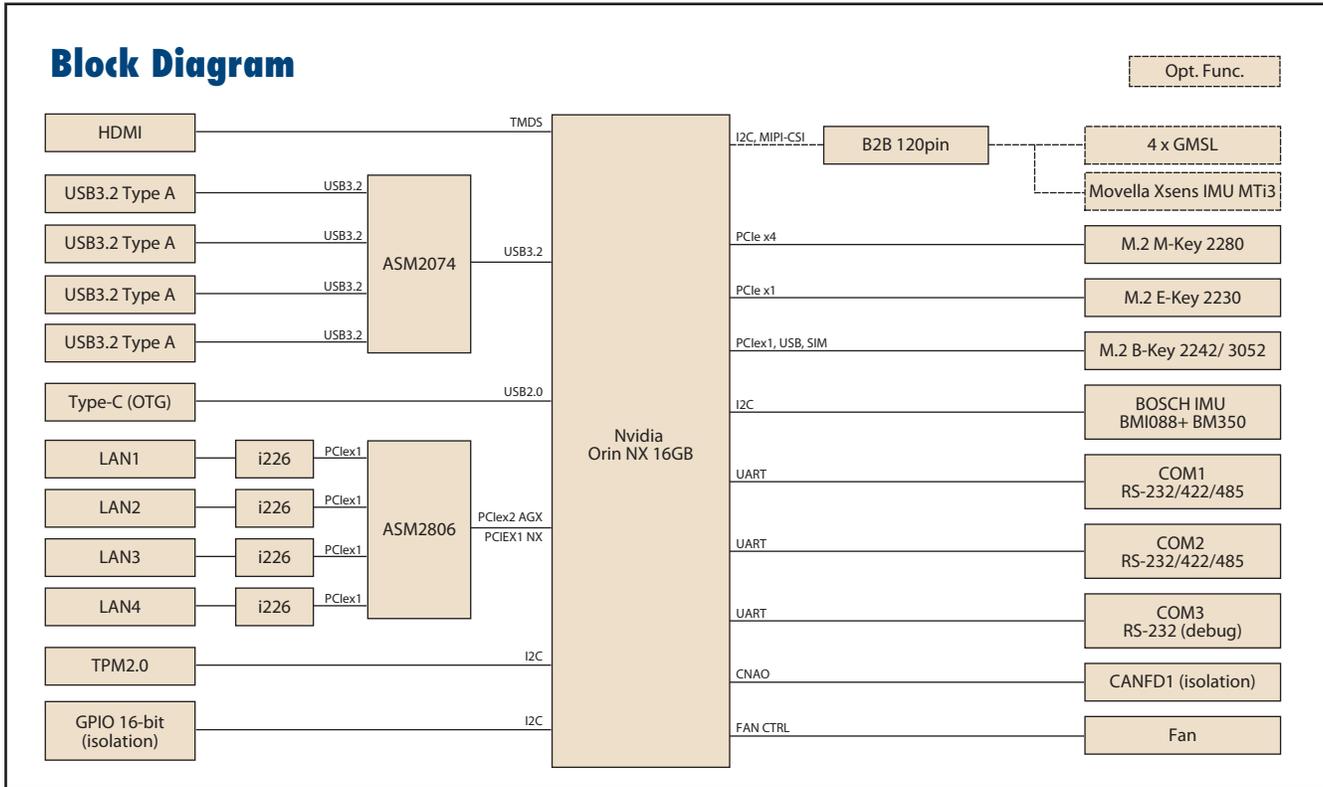
NEW

Features

- AMR AI Controller Board up to 100 TOPS AI computing
- Dedicated I/Os for AMR: 4xGbE, 2xCOM, isolated DIO, isolated CANFD
- Built-in 2 x GMSL 3D camera solution
- Pre-load Ubuntu22.04 with JetPack 6.1 BSP, camera driver, NVIDIA Issac™ ROS, and Advantech Robotic Suite

NVIDIA Elite Partner | Edge AI Suite | CCC | CE | FCC

Specifications

Genreal	Product	ASR-A701DVK-G01
	Description	ASR-A701, Orin NX, 2 x Orbbec 3D CAM develop kit
DevKit Components	MB	ASR-A701-M1A1
	Storage	128GB M.2 NVMe with pre-load image
	Camera IO Card	AFE-RM04-4PA1
	Camera	2 x Orbbec Gemini 335LG
	OS	Ubuntu 22.04 LTS with JetPack 6.1
Processor	NVIDIA Jetson Series	Optional Orin NX 16GB
Ethernet	Interface	RJ-45
	Controller	Intel® i226
	Speed	4 x GbE
Display	HDMI	1 x HDMI 2.0 (Max. resolution 3840 x 2160 @ 24Hz)
IO Ports	USB	4 x USB 3.2 Type A
	OTG USB	1 x Type C USB (for system recovery only)
	CANBus	1 x isolated CANFD 1Mbps/2Mbps
	DI/DO	8bit isolated DIO
	COM	2 x RS232/422/485
	Remote switch	LED/WDT/PWS/GND/RESET/Debug
	Fan	1x Fan connector (12V/1A)
	Switch	AT/ATX
Expansion	M.2 E key	1 x 2230 (PCIex1, USB2)
	M.2 B key	1 x 2280/3042/3052 (PCIex1, USB2, SIM)
	IMU	BOSCH BMI088 6-axis (Optional), Movella Xsens MTi3 AHRS 9-axis (Optional)
Others	TPM	TPM2.0
	Time Sync	Supports GPS PPS signal (optional)
Camera	Module Name	Gemini 335Lg
	Vendor	Orbbec
	Depth Resolution	Up to: 1280 x 800 @ 30fps, 848 x 480 @ 60fps
	IR Resolution	Up to: 1280 x 800 @ 30fps, 848 x 480 @ 60fps
	RGB Resolution	Up to: 1280 x 800 @ 60fps, 1280 x 720 @ 60fps
	Feature	Global Shutter
Power	Power Supply voltage	20~28V
	Power Type	ATX/AT mode, ATX default
Environment	Operational Temperature	-10 ~ 55°C
	Operating Humidity	95% @ 40 °C (non-condensing)
Mechanical	Dimensions (W x D x H)	184.5 x 170 x 59 mm (including standoffs)
	Weight	3 Kg
Certifications	EMC/Safety	CE/FCC Class B

ADVANTECH | AMR Controller

All product specifications are subject to change without notice.
Last updated: 30-Jan-2026

Block Diagram

Ordering Information

Part No.	Description	Camera IO Card	Storage	Camera	Operating Temp.
ASR-A701DVK-G01	ASR-A701, Orin NX, 2 x Orbbec 3D CAM develop kit	AFE-RM04-4PA1	128GB	2 x Gemini 335LG (Orbbec)	-10~55°C

ASR-A701DVK-G01 Packing List

Part No.	Description	Quantity
ASR-A701-M1A1	ASR-A701 Orin NX 16GB	1
1970006229T001	Cooler	1
AFE-RM04-4PA1	4 port GMSL card	1
SQF-C8MV2-128GDEDM	128GB M.2 NVMe	1
96ICAM-335	Orbbec Gemini 335LG	2
96PSA-A230W24P4-3	ADP A/D 100-240V 230W 24V	1
-	Ubuntu 22.04 LTS with JetPack 6.1	1

Optional Item for Default SKU

Part Number	Description
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801-11	Power cable 3-pin 183cm, UK type
1700000237	Power cable, 3-Pin 183cm, PSE type
1751000759-01	FAKRA Cable 1M, Z Type

Compatible Sensors List

Compatible Sensors for Autonomous Applications						
Sensors	Manufacturer	Spec	Sensor MPN	Camera Resolution	Camera Sensor	Advantech PN
GMSL Camera	oToBrite	2D	oToCAM222	2MP	Sony ISX021	96ICAM-222
	Orbbec	2D+3D	Gemini 335Lg	1MP (RGB), 1 MP (depth)		96ICAM-335
	StereoLabs	3D	ZED-311110	2.3MP	-	-
	StereoLabs	3D	ZED X GS	2.3MP	Onsemi AR0234CS	
	StereoLabs	2D	ZED X ONE GS	2.3MP	Onsemi AR0234CS	
	StereoLabs	2D	ZED X ONE 4K	8.4MP	Onsemi IMX678	
	StereoLabs	2D	ZED X ONE	8.4MP	SONY IMX678	-
	StereoLabs	2D	ZED X ONE	2.3MP	Onsemi AR0234	-
USB Camera	Orbbec	2D+3D	Gemini 335L	1MP (RGB), 1 MP (depth)		-
	StereoLabs	3D	ZED 2i	4MP	OmniVision OV4689	
	StereoLabs	3D	ZED Mini	4MP	OmniVision OV4689	
IMU	BOSCH	6-axis	BMI088			On board
	Movella	9-axis	MTi-3-5A-DK			AFE-RM05
Lidar	Slamtec	2D	RPLIDAR-A2M12			-
	Slamtec	2D	RPLIDAR C1 LiDAR			-
	SICK	2D	NanoScan3			-
	SICK	3D	multiScan100			-