AI AGX Orin Kicker

Jetson Series
COK-864-A/COK-832-A



Features

- Jetson AGX Orin 64GB/32GB
- Display: 1 x DP
- Ethernet: 1 x GbE
- Camera Input: 4-Lane CSI
- USB 3.2: 4 ports
- Power: 12-19 V DC

Specifications

Model	COK-864-A	COK-832-A
Supported Module	AGX Orin 64GB	AGX Orin 32GB
AI Performance	275 TOPS	200 TOPS
GPU	2048-core NVIDIA Ampere GPU with 64 Tensor Cores	1792-core NVIDIA Ampere GPU with 56 Tensor Cores
CPU	12-core Arm® Cortex® -A78AE v8.2 64-bit CPU 3MB L2 + 6MB L3	8-core Arm® Cortex® -A78AE v8.2 64-bit CPU 2MB L2 + 4MB L3
Memory	64GB 256-bit LPDDR5 204.8 GB/s	32GB 256-bit LPDDR5 204.8 GB/s
Storage	64GB eMMC 5.1	
TF	1 x TF	
SSD	M.2 NVMe Support	
Display	1 x Display Port	
Camera Input	4 x 4 Lanes / 6 x 2 Lanes CSI	
Wi-Fi	5G/Wi-Fi 6 & BT	
USB	4 x USB 3.2 Type A, 2 x USB 3.2 Type C, 1 Micro USB	
Ethernet	1 x 10 GbE	
Other Features	2 x CAN, 1 x UART, 1 x I2S, 1 x SPI, 1 x I2C, GPIOs	
Operating Temperature	0℃ - 70℃	
Operating Humidity	10% - 90%	
Vibration	3G 0 – 100Hz Random	
Power	DC 12-19V	
Operating System	Ubuntu	
Dimensions	110 mm(L) x 101 mm(W) x 60 mm(H)	

Camera Expansion Connector

Camera connector: QSH-060-01-H-D-A; mating connector: QTH-060-0x-H-D-A. CSI signals support:

- 4 x 4 lanes or 6 x 2 lanes;
- CAM_I2C, clock, and GPIOs;
- I2C

CSI The connector pinout is shown below:

Pin	Signal	Module Pin	Description	Signal Type	Logic Level
1	CSI0_D0_P	E42	CSI 0 Data 0	Input	MIPI DPHY/CPHY
3	CSI0_D0_N	E41			
5	–	–	Ground	Ground	–
7	CSI0_CLK_P	F43	CSI 0 Clock	Input	MIPI DPHY/CPHY
9	CSI0_CLK_N	F42			
11	–	–	Ground	Ground	–
13	CSI0_D1_P	E39	CSI 0 Data 1	Input	MIPI DPHY/CPHY
15	CSI0_D1_N	E38			
17	–	–	Ground	Ground	–
19	CSI2_D0_P	A41	CSI 2 Data 0	Input	MIPI DPHY/CPHY
21	CSI2_D0_N	A42			
23	–	–	Ground	Ground	–
25	CSI2_CLK_P	B43	CSI 2 Clock	Input	MIPI DPHY/CPHY
27	CSI2_CLK_N	B42			
29	–	–	Ground	Ground	–
31	CSI2_D1_P	C42	CSI 2 Data 1	Input	MIPI DPHY/CPHY
33	CSI2_D1_N	C41			
35	–	–	Ground	Ground	–
37	CSI4_D0_P	G48	CSI 4 Data 0	Input	MIPI DPHY/CPHY
39	CSI4_D0_N	G47			
41	–	–	Ground	Ground	–
43	CSI4_CLK_P	F48	CSI 4 Clock	Input	MIPI DPHY/CPHY
45	CSI4_CLK_N	F47			
47	–	–	Ground	Ground	–
49	CSI4_D1_P	E47	CSI 4 Data 1	Input	MIPI DPHY/CPHY
51	CSI4_D1_N	E48			
53	–	–	Ground	Ground	–
55	–	–	DVDD_CAM_LV. Reserved for Low Voltage Digital Supply	(Power)	–
57					
59	CSI5_D0_P	D42	CSI 5 Data 0	Input	MIPI DPHY/CPHY
61	CSI5_D0_N	D43			
63	–	–	Ground	Ground	–
65	CSI5_CLK_P	C44	CSI 5 Clock	Input	MIPI DPHY/CPHY
67	CSI5_CLK_N	C45			

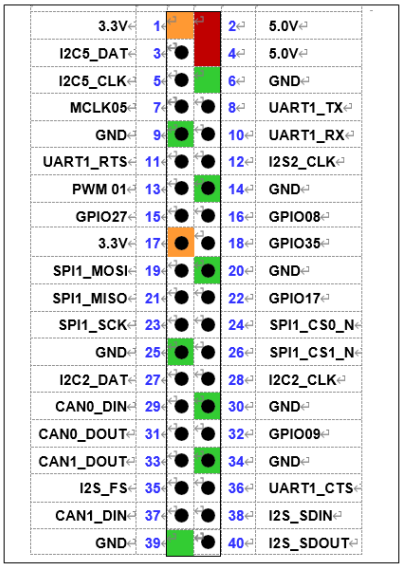
69	–	–	Ground	Ground	–
71	CSI5_D1_P	D46	CSI 5 Data 1	Input	MIPI DPHY/CPHY
73	CSI5_D1_N	D45			
75	I2C3_CLK	F53	Camera I2C	Bidir/OD	1.8V (3.3V tolerant)
77	I2C3_DAT	E53			
79	–	–	Ground	Ground	–
81	–	–	2.8V Analog Camera supply (see note)	Power	–
83					
85	GPIO10	A62	Camera FRSYNC #1	Output	1.8V
87	I2C2_CLK	J61	General Purpose I2C #2	Bidir/OD	1.8V (3.3V tolerant)
89	I2C2_DAT	K61			
91	MCLK02	J54	Camera #0 Master Clock	Output	1.8V
93	UART4_CTS	L49	Camera #0 Powerdown	Output	1.8V
95	UART4_TX	L5	Camera #0 Reset	Output	1.8V
97	GPIO6	E59	Camera FRSYNC #3	Output	1.8V
99	–	–	Ground	Ground	–
101	–	–	Unused	Unused	–
103	SPI2_MOSI	F60	Camera Interrupt #3	Input	1.8V
105	I2C5_CLK	A53	General I2C #5	Bidir/OD	1.8V (3.3V tolerant)
107	I2C5_DAT	C53			
109	–	–	Unused	Unused	–
111					
113					
115	–	–	Ground	Ground	–
117	SPI2_CLK	E61	Camera Interrupt #1	Input	1.8V
119	GPIO12	E10	System power enable	Output	1.8V
2	CSI_1_D0_P	G41	CSI 1 Data 0	Input	MIPI DPHY/CPHY
4	CSI_1_D0_N	G42			
6	–	–	Ground	Ground	–
8	CSI_1_CLK_P	H43	CSI 1 Clock	Input	MIPI DPHY/CPHY
10	CSI_1_CLK_N	H42			
12	–	–	Ground	Ground	–
14	CSI_1_D1_P	J41	CSI 1 Data 1	Input	MIPI DPHY/CPHY
16	CSI_1_D1_N	J42			
18	–	–	Ground	Ground	–
20	CSI_3_D0_P	E45	CSI 3 Data 0	Input	MIPI DPHY/CPHY
22	CSI_3_D0_N	E44			
24	–	–	Ground	Ground	–
26	CSI_3_CLK_P	F46	CSI 3 Clock	Input	MIPI DPHY/CPHY
28	CSI_3_CLK_N	F45			
30	–	–	Ground	Ground	–

32	CSI_3_D1_P	G44	CSI 3 Data 1	Input	MIPI DPHY/CPHY
34	CSI_3_D1_N	G45			
36	–	–	Ground	Ground	–
38	CSI6_D0_P	K44	CSI 6 Data 0	Input	MIPI DPHY/CPHY
40	CSI6_D0_N	K43			
42	–	–	Ground	Ground	–
44	CSI6_CLK_P	J44	CSI 6 Clock	Input	MIPI DPHY/CPHY
46	CSI6_CLK_N	J45			
48	–	–	Ground	Ground	–
50	CSI6_D1_P	H46	CSI 6 Data 1	Input	MIPI DPHY/CPHY
52	CSI6_D1_N	H45			
54	–	–	Ground	Ground	–
56	–	–	DVDD_CAM_LV. Reserved for Low Voltage Digital Supply	(Power)	–
58					
60	CSI7_D0_P	A44	CSI 7 Data 0	Input	MIPI DPHY/CPHY
62	CSI7_D0_N	A45			
64	–	–	Ground	Ground	–
66	CSI7_CLK_P	B45	CSI 7 Clock	Input	MIPI DPHY/CPHY
68	CSI7_CLK_N	B46			
70	–	–	Ground	Ground	–
72	CSI7_D1_P	C47	CSI 7 Data 1	Input	MIPI DPHY/CPHY
74	CSI7_D1_N	C48			
76	GPIO14	L15	Camera Error #1	Input	1.8V
78	GPIO28	L9	Camera Error #2	Input	1.8V
80	–	–	Ground	Ground	–
82	–	–	2.8V Analog Camera supply (see note)	Power	–
84	GPIO29	A7	Camera Error #3	Input	1.8V
86	UART4_RTS	L4	Camera Error #4	Input	1.8V
88	MCLK03	H53	Camera #1 Master Clock	Output	1.8V
90	GPIO15	F10	Camera #1 Powerdown	Output	1.8V
92	GPIO16	F9	Camera #1 Reset	Output	1.8V
94	MCLK04	H55	Camera #2 Master Clock	Output	1.8V
96	GPIO13	G7	Camera FRSYNC #4	Output	1.8V
98	GPIO7	F59	Camera FRSYNC #2	Output	1.8V
100	–	–	Ground	Ground	–
102	–	–	1.8V Camera supply.	Power	–
104	SPI2_CS0_N	D60	Camera Interrupt #4	Input	1.8V
106	SPI2_MISO	D62	Camera Interrupt #2	Input	1.8V
108	–	–	3.3V supply	Power	–
110					
112	–	–	Unused	Unused	–

114					
116	–	–	Ground	Ground	–
118	–	–	3.3V supply	Power	–
120					

40-Pin Expansion Header

The carrier board provides a 40-pin expansion header (2.54 mm pitch, 2 x 20). Pinout:



Signals include:

- I2S interface;
- I2C, SPI, UART, CAN, and PWM;
- GPIOs

All signals use 3.3 V logic levels.

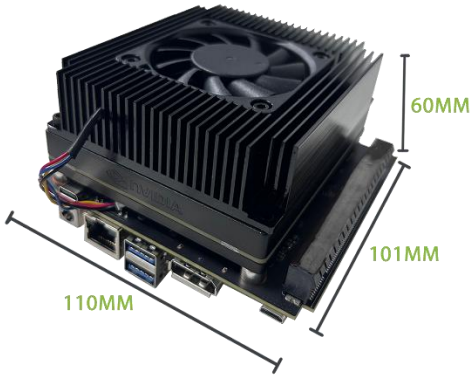
The pinout is shown below:

Pin	Signal	Module Pin	Description		Signal Type	Maximum Current	GPIO	POR	PU/PD
1	–	–	–	Main 3.3V Supply	Power	1A	–	–	–
2	–	–	–	Main 5.0V Supply	Power	1A	–	–	–
3	I2C4_DAT	E60	GP16_I2C8_DAT	General I2C #5 Data	Bidir/OD	±1mA	PDD.02	z	2.2 PU
4				Main 5.0V Supply	Power	1A	–	–	–
5	I2C4_CLK	D61	GP81_I2C9_CLK	I2C #5 Clock	Bidir/OD	±1mA	PDD.01	z	2.2 PU
6	–	–	–	Ground	Ground	–	–	–	–
7	MCLK05	L57	GP66	GPIO/ Clock	Bidir	±20uA	PQ.06	pd	–
8	UART1_TX	K53	GP70_UART1_TXD_ BOOT2_STRAP	GPIO/ UART	Output	±24mA	PR.02	pd	–
9	–	–	–	Ground	Ground	–	–	–	–
10	UART1_RX	K54	GP71_UART1_RXD	GPIO/ UART	Input	–	PR.03	pd	–
11	UART1_RTS	L51	GP72_UART1_RTS_N	GPIO/ UART	Output	±24mA	PR.04	pd	–
12	I2S2_CLK	G4	GP122	GPIO/ I2S	Bidir	±20uA	PH.07	pd	–
13	PWM01	K57	GP68	GPIO	Bidir	±20uA	PR.00	pd	–
14	–	–	–	Ground	Ground	–	–	–	–
15	GPIO27	H52	GP88_PWM1	GPIO/ PWM	Bidir	±20uA	PN.01	z	–
16	GPIO08	B62	GP25	GPIO/ Digital Mic Data	Input	±1mA	PBB.01	pd	–
17	–	–	–	Main 3.3V Supply	Power	1A	–	–	–
18	GPIO35	L50	GP115	GPIO/ PWM	Output	±20uA	PH.00	z	–
19	SPI1_MOSI	D55	GP49_SPI1_MOSI	GPIO/ SPI	Bidir	±20uA	PZ.05	pd	–
20	–	–		Ground	Ground	–	–	–	–

21	SPI1_MISO	A56	GP48_SPI1_MISO	GPIO/ SPI	Bidir	±20uA	PZ.04	pd	–
22	GPIO17	A54	GP56	GPIO	Bidir	±20uA	PP.04	pd	–
23	SPI1_CLK	J57	GP47_SPI1_CLK	GPIO/ SPI	Bidir	±20uA	PZ.03	pd	–
24	SPI1_CS0_N	E55	GP50_SPI1_CS0_N	GPIO/ SPI	Bidir	±20uA	PZ.06	z	–
25	–	–	–	Ground	Ground	–	–	–	–
26	SPI1_CS1_N	B56	GP51_SPI1_CS1_N	GPIO/ SPI	Bidir	±20uA	PZ.07	z	–
27	I2C2_DAT	K61	GP14_I2C2_DAT	I2C #2 Data/ GPIO	Bidir/OD	±1mA	PDD.00	z	2.2 PU
28	I2C2_CLK	J61	GP13_I2C2_CLK	I2C #2 Clock/ GPIO	Bidir/OD	±1mA	PCC.07	z	2.2 PU
29	CAN0_DIN	F58	GP18_CAN0_DIN	GPIO/ CAN	Input	±1mA	PAA.01	z	–
30	–	–	–	Ground	Ground	–	–	–	–
31	CAN0_DOUT	D59	GP17_CAN0_DOUT	GPIO/ CAN	Output	±1mA	PAA.00	z	–
32	GPIO09	C61	GP26	GPIO/ Digital Mic Clock	Bidir	±1mA	PBB.00	pd	–
33	CAN1_DOUT	H61	GP19_CAN1_DOUT	GPIO/ CAN	Output	±1mA	PAA.02	z	–
34	–	–	–	Ground	Ground	–	–	–	–
35	I2S2_FS	E4	GP125	GPIO/ I2S	Bidir	±20uA	PI.02	pd	–
36	UART1_CTS	H54	GP73_UART1_CTS_N	GPIO/ UART	Input	–	PR.05	pd	–
37	CAN1_DIN	B61	GP20_CAN1_DIN	GPIO/ CAN	Input	±1mA	PAA.03	z	–
38	I2S2_DIN	F6	GP124	GPIO/ I2S	Input	±20uA	PI.01	pd	–
39	–	–	–	Ground	Ground	–	–	–	–
40	I2S2_DOUT	F5	GP123	GPIO/ I2S	Output	±20uA	PI.00	pd	–

Dimensions

110mm x 101mm x 60mm



Accessories

- Power Adapter
- USB Cable, Type-C to Type-A
- User Guide

Ordering Information

Model	Product Description
COK-864-A	AGX Orin 64GB, 1 Display Port, 1 100/1000Mbps, 4 Lanes CSI, DC 12-19V, 0℃-70℃
COK-832-A	AGX Orin 32GB, 1 Display Port, 1 100/1000Mbps, 4 Lanes CSI, DC 12-19V, 0℃-70℃

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