

ARC6N0 NX

Highly Integrated AI Core, Provide 157 TOPS and Expandability

YUAN
Visualize Intelligent Planet

Features

- Powered by NVIDIA® Jetson Orin™ NX Super up to 157 TOPS
- 3-Axis Digital Accelerometer, 3-Axis Digital Gyroscope and 3-Axis Magnetometer
- 1×M.2 E Key / 2×M.2 M Key / 1×M.2 B Key
- 2×USB3.2 Gen2 Type-C
- I2C / GPIO / CAN BUS
- Compact Design

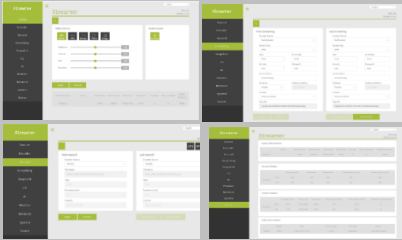


Specifications

System		
CPU	NVIDIA Jetson Orin™ NX 8GB Super 6-Core Arm® Cortex®-A78AE v8.2 64-Bit CPU 1.5MB L2 + 4MB L3	NVIDIA Jetson Orin™ NX 16GB Super 8-Core Arm® Cortex®-A78AE v8.2 64-Bit CPU 2MB L2 + 4MB L3
GPU	1024-Core NVIDIA Ampere Architecture GPU with 32 Tensor Cores	
AI Performance	NVIDIA Jetson Orin™ NX 8GB Super 117 TOPS	NVIDIA Jetson Orin™ NX 16GB Super 157 TOPS
System Memory	NVIDIA Jetson Orin™ NX 8GB Super 8GB LPDDR5	NVIDIA Jetson Orin™ NX 16GB Super 16GB LPDDR5
Interface		
Storage	Supports External NVMe	
Display Interface	1×Mini HDMI2.0	
Ethernet	1×RJ45 for 10/100/1000Mbps Ethernet DHCP Client	
Expansion Slot	Main Board 1×M.2 2230 E Key PCIe Gen4*1/USB2.0 Slot 1×M.2 2230 M Key PCIe Gen4*2 Slot Daughter Board 1×M.2 2230 M Key PCIe Gen4*4 Slot 1×M.2 3042/3052 B Key USB3.0 Slot	
USB	Main Board 3×USB2.0 (Wafer) 2×USB3.2 Gen2 (Type-C) Daughter Board 1×USB2.0 (Wafer)	
MIPI	8 MIPI CSI-2 Lanes (D-PHY 2.1, Support MIPI Camera, Capture Card)	
Peripheral Communication	Main Board 6-Axis IMU (3-Axis Accelerometer + 3-Axis Gyroscope) 1×UART 4×GPIO 1×I2C (Shared with Daughter Board) 1×PWM FAN 1×Power Button Wafer 1×CAN Bus Daughter Board 3-Axis IMU (3-Axis Magnetometer) 1×I2C (I2C1 Shared with Main Board) 1×Line In 1×Speaker Left & Right 1×SPI 2×CAN Bus 1×Nano SIM Card Slot	
Misc. Features	Firmware Upgradable	

Add-On Cards / SDK / Software

Video Feature	
Video Encode	NVIDIA Jetson Orin™ NX Super: AV1 (UHP) 1×4K60 3×4K30 6×1080p60 12×1080p30 H.265 (UHP) 1×4K60 3×4K30 6×1080p60 12×1080p30 H.264 (UHP) 1×4K60 2×4K30 5×1080p60 11×1080p30
Video Decode	NVIDIA Jetson Orin™ NX Super: AV1 (Main Profile) 1×8K30 2×4K60 4×4K30 10×1080p60 20×1080p30 H.265 (Main, Main10) 1×8K30 2×4K60 4×4K30 9×1080p60 18×1080p30 H.264 (Baseline, Main, High) 1×4K60 2×4K30 5×1080p60 11×1080p30 VP9 (Profile 0, Profile 2) 1×4K60 3×4K30 7×1080p60 15×1080p30
SDK	
QCAP	Capture High Performance Renderer Image Snapshot Deinterlace, Alpha Blending Engine Auto Signal Detection 2D/3D Video, Audio and VANC Streams Capture Record Encrypt / Sync / Clone / Recording Time-Shifting / Rewind / Pre-Event / Recording Multi-Streams (3D) Recording Animation Transition Effect Video Cropping, Scaling and Alpha Blending Engine Stream 2D/3D Universal Stream Client 2D/3D Multi-Streams Stream Server RTSP, RTMP, HLS, SRT, TS, WebRTC. NDI-HX (*), Full NDI (*), Dante AV-H (*) Animation Transition Effect Video Cropping, Scaling and Alpha Blending Engine *Separate License Required
QDEEP	AI SDK Integrated Multiple Algorithms and Deep-Learning Models in Various Fields of Applications Face Recognition Objects Detection Objects Segment Optical Character Recognition License Plate Recognition Customizable Video AI Functions Upon Request

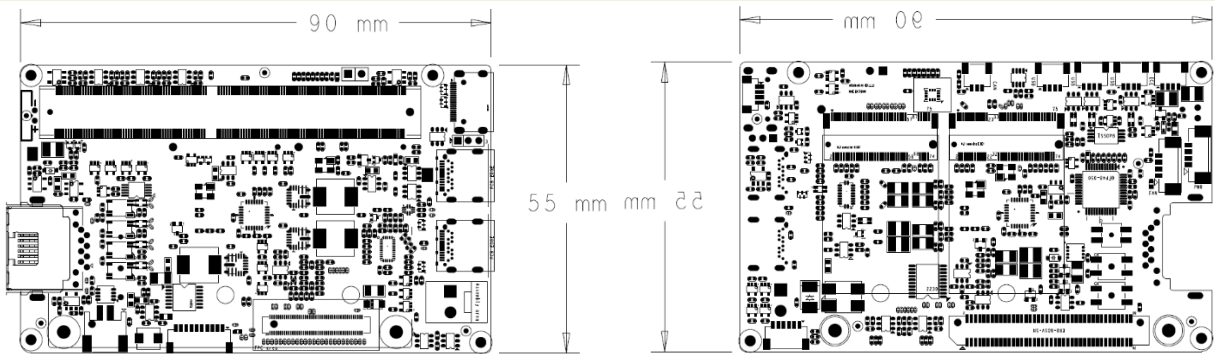
Software (Optional)		
Stream Catcher Pro	Capture Auto Signal Detection Deinterlace, OSD, Color Adjustment Image Snapshot Animation Transform Effect for PGM	
	Record AV1, H.26X MP4, TS Multi-Stream Recording Schedule Recording	
	Stream Multi-Streams Stream Server RTSP, RTMP, HLS, SRT, TS, WebRTC., Full NDI (*), NDI-HX (*), Dante AV-H (*) *Separate License Required	
Xtreamer	Web Based User Interface	
	Encode / Decode AV1, H.26X	
	Color Format Adjust 444 / 422 / 420, 10Bit / 8Bit Select	
	Record MP4, TS	
	Stream / Network RTSP, RTMP, HLS, SRT, TS, WebRTC. NDI-HX (*), Full NDI (*), Dante AV-H (*) *Separate License Required	

Environment

Development Environment	
JetPack	6.2 or Higher
Environment	
Power Supply	DC input : 12~36V
Power Consumption	TBA
Operating Temperature	Standard Version: 0~60 ° C with Airflow
Storage Temperature	-20~80 ° C

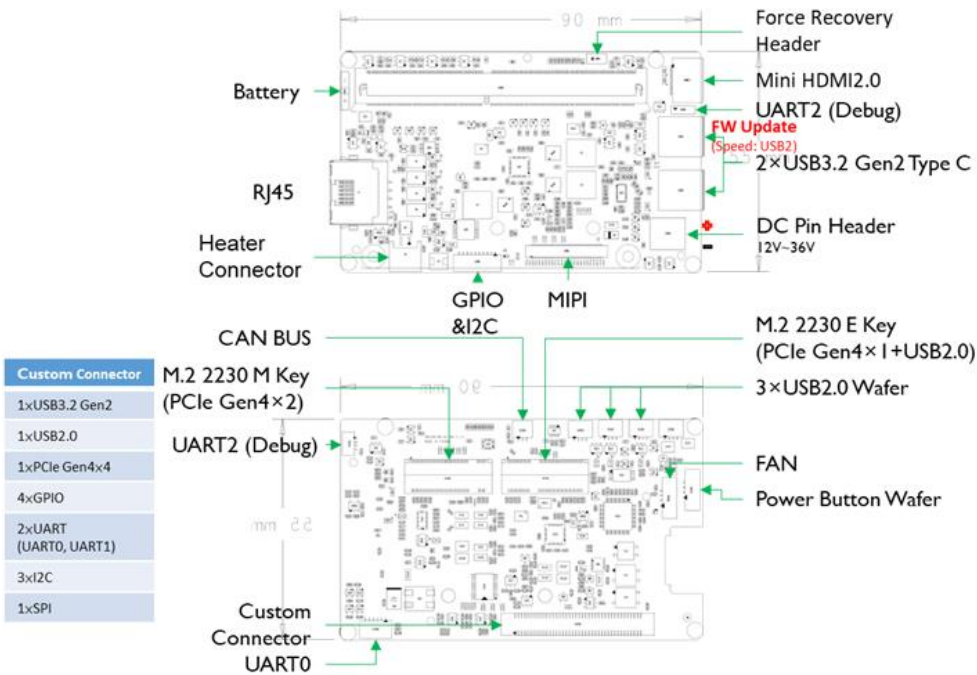
Mechanical

- Dimension of main Board: 90mm×55mm
- Dimension of daughter Board: 90mm×55mm

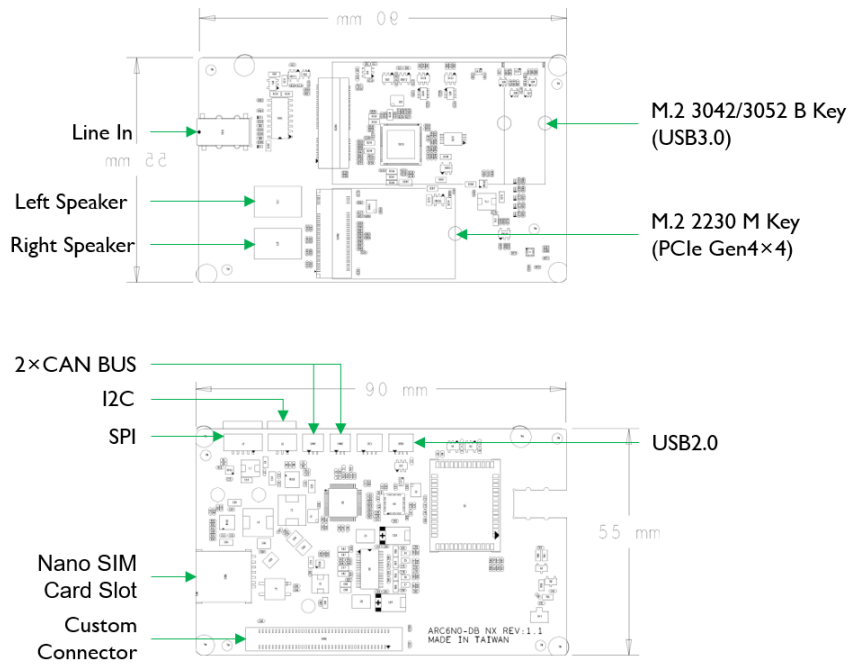


I/O Layout

Carrier Board (Main Board)

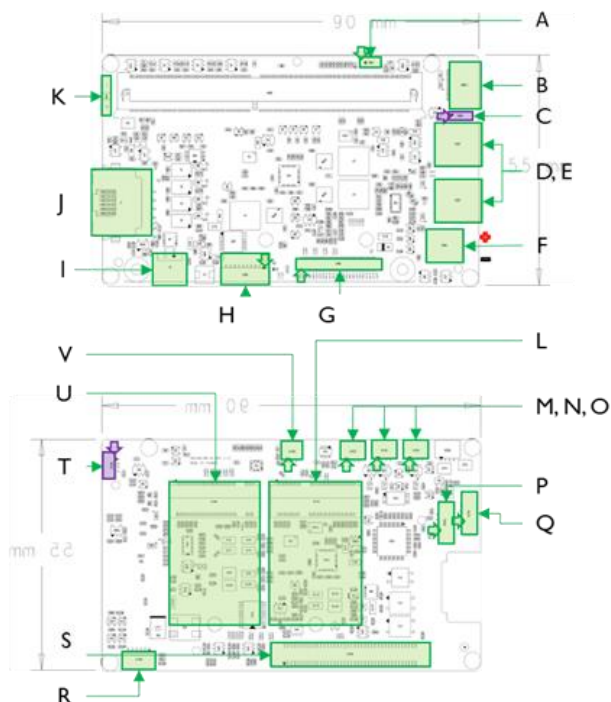


Carrier Board (Daughter Board)



Appendix

ARC6N0-MB NX V1.1S

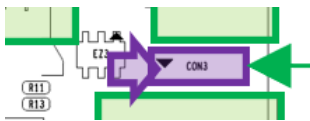


- A. CON1
- B. HDMI1
- C. CON3
- D, E. USB1, USB2
- F. CON4
- G. CON5
- H. CON6
- I. J2
- J. J1
- K. BAT1
- L. SPC11
- M, N, O. SUSB3, SUSB2, SUSB1
- P. SFAN1
- Q. SCON3
- R. SCON5
- S. SCON4
- T. SCON1
- U. SCON2
- V. SCAN1

Label	Function	Note
CON1	Force Recovery Header	Pitch: 2.54mm
HDMI1	Mini HDMI2.0	N/A
CON3	UART2 (Debug)	Pitch: 2mm
USB1, USB2	USB3.2 Gen2 Type C	N/A
CON4	DC Pin Header	Pitch: 3.96mm
CON5	MIPI	N/A
CON6	GPIO&I2C	Pitch: 1mm
J2	Heater Connector	N/A
J1	RJ45	N/A
BAT1	Battery	N/A
SPC11	M.2 2230 E Key	N/A
SUSB3, SUSB2, SUSB1	USB2.0 Wafer	Pitch: 1mm

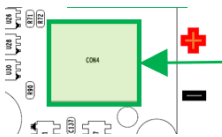
SFAN1	FAN	Pitch: 1.25mm
SCON3	Power Button Wafer	Pitch: 1.25mm
SCON5	UART0	Pitch: 1.0mm
SCON4	Custom Connector	N/A
SCON1	UART2 (Debug)	Pitch: 1mm
SCON2	M.2 2230 M Key	N/A
SCAN1	CAN BUS	N/A

C. UART2 (Connector: PH-MC1D03N-01 PH:2mm NY-6T)



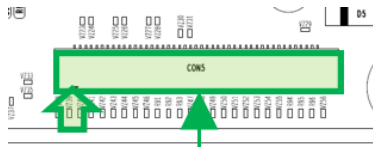
1	UART2 Tx (3.3V)
2	GND
3	UART2 Rx (3.3V)

F. DC Pin Header (Connector: Nylon 66 Neltron 2114S-02)



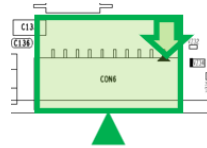
1	+
2	-

G. MIPI (Connector: M2-A1-67-R-SMT-5.80-KE-T/R)



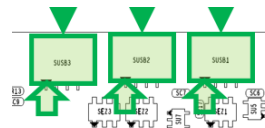
1	GND	2	GND
3	CAM0_MCLK_LS	4	CSI_0_D0_N
5	CAM0_PWDN_LS	6	CSI_0_D0_P
7	GND	8	GND
9	CAM0_I2C_SDA	10	CSI_0_D1_N
11	CAM0_I2C_SCL	12	CSI_0_D1_P
13	GND	14	GND
15	CAM1_MCLK_LS	16	CSI_0_CLK_N
17	CAM1_PWDN_LS	18	CSI_0_CLK_P
19	GND	20	GND
21	CAM1_I2C_SDA	22	CSI_1_D0_N
23	CAM1_I2C_SCL	24	CSI_1_D0_P
25	GND	26	GND
27	CAM01_RSTn_LS	28	CSI_1_D1_N
29	I2S0_DOUT_3V3	30	CSI_1_D1_P
31	I2S0_DIN_3V3	32	GND
33	I2S0_FS_3V3	34	CSI_1_CLK_N
35	I2S0_SCLK_3V3	36	CSI_1_CLK_P
37	GND	38	GND
39	3.3V	40	3.3V
41	3.3V	42	3.3V
43	3.3V	44	3.3V
45	GND	46	GND
47	CAM2_MCLK_LS	48	CSI_2_D0_N
49	CAM2_PWDN_LS	50	CSI_2_D0_P
51	GND	52	GND
53	CAM2_I2C_SDA	54	CSI_2_D1_N
55	CAM2_I2C_SCL	56	CSI_2_D1_P
57	GND	58	GND
59	CAM3_MCLK_LS	60	CSI_2_CLK_N
61	CAM3_PWDN_LS	62	CSI_2_CLK_P
63	GND	64	GND
65	CAM3_I2C_SDA	66	CSI_3_D0_N
67	CAM3_I2C_SCL	68	CSI_3_D0_P
69	GND	70	GND
71	CAM23_RSTn_LS	72	CSI_3_D1_N
73	I2S1_DOUT_3V3	74	CSI_3_D1_P
75	I2S1_DIN_3V3	76	GND
77	I2S1_FS_3V3	78	CSI_3_CLK_N
79	I2S1_SCLK_3V3	80	CSI_3_CLK_P
81	GND	82	GND
83	3.3V	84	3.3V
85	3.3V	86	3.3V
87	3.3V	88	3.3V
89	3.3V	90	3.3V

H. GPIO&I2C Header (Connector: WR-M10S04 NY-9T)



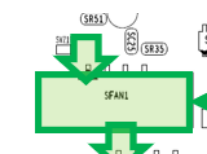
1	+5V
2	GND
3	+3.3V
4	GND
5	GPIO 1
6	GPIO 7
7	GPIO 9
8	GPIO 11
9	I2C1 CLK
10	I2C1 DATA

M, N, O. USB2.0 Header (Connector: WF1001X04SVL-01)



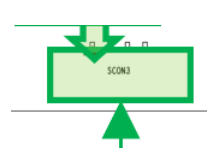
1	GND
2	D+
3	D-
4	5V

P. Fan Header (Connector: WF1251X04SVL-04)



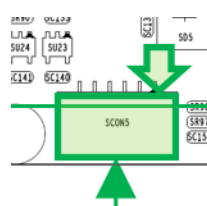
1	GND
2	5V
3	Fan Tachometer
4	Fan PWM Signal

Q. Power Button Wafer (Connector: WF1251X04SVL-04)



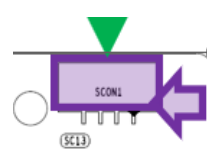
1	Power Button
2	3.3V
3	LED+
4	LED-

R. UART0 Wafer (Connector: WR-M06S04)



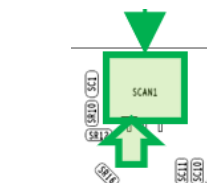
1	GND
2	CTS
3	Vcc (3.3V)
4	UART0 Tx
5	UART0 Rx
6	RTS

T. UART2 Wafer (Connector: WR-M04S05)



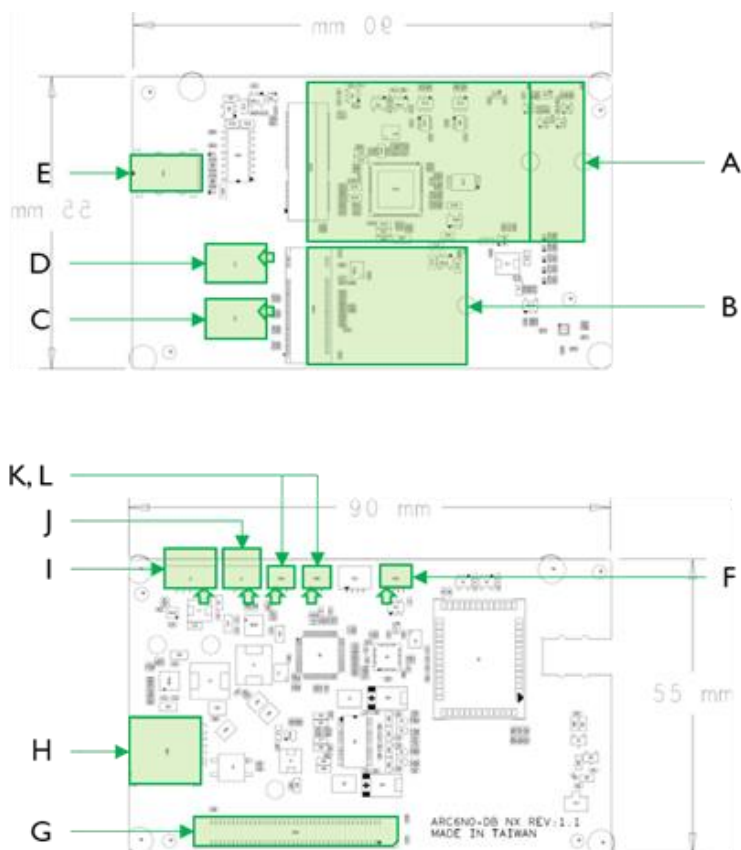
1	UART2 Rx (3.3V)
2	UART2 Tx (3.3V)
3	GND
4	3.3V

V. CAN BUS Wafer (Connector: WR-M03S04)



1	CAN H
2	GND
3	CAN L

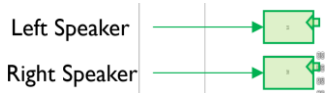
ARC6N0-DB NX V1.1



A. SCON1
 B. SCON2
 C. SJ2
 D. SJ1
 E. SAJ1
 F. USB1
 G. CON2
 H. CON1
 I. J1
 J. J2
 K, L. CAN1, CAN2

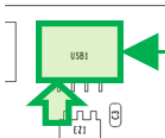
Label	Function	Note
SCON1	M.2 3042/3052 B Key	N/A
SCON2	M.2 2230 M Key	N/A
SJ2	Right Speaker	N/A
SJ1	Left Speaker	N/A
SAJ1	Line In	N/A
USB1	USB2.0	ROHS2+HF SMD PH:1mm LCP 勝遠 WF1001X04SVL-01
CON2	Custom Connector	N/A
CON1	Nano SIM Card Slot	N/A
J1	SPI	RoHS2 PH:1.25mm 福軒 FB125GH1-WSR05NS-T
J2	I2C	RoHS2 PH:1.25mm 福軒 FB125GH1-WSR03NS-T
CAN1, CAN2	CAN BUS	N/A

C, D. Speaker (Connector: WR-M02R00)



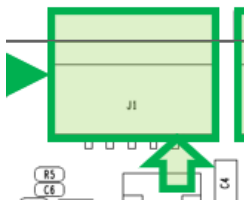
Left	
1	L+
2	L-
Right	
	R+
	R-

E. USB2.0 (Connector: WF1001X04SVL-01)



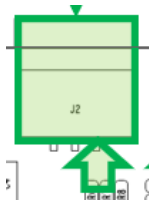
1	GND
2	D+
3	D-
4	5V

I. SPI (Connector: FB125GH1-WSR05NS-T)



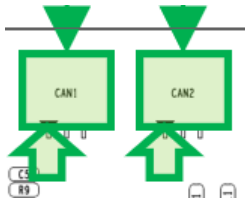
1	SCK
2	MOSI
3	MISO
4	CS0
5	GND

J. I2C (Connector: FB125GH1-WSR03NS-T)



1	SCL
2	SDA
3	GND

K, L. CAN BUS (Connector: WR-M03S04)



1	CAN H
2	GND
3	CAN L