

JNX12x PAB carrier



with Pixhawk Autopilot Bus standard connector

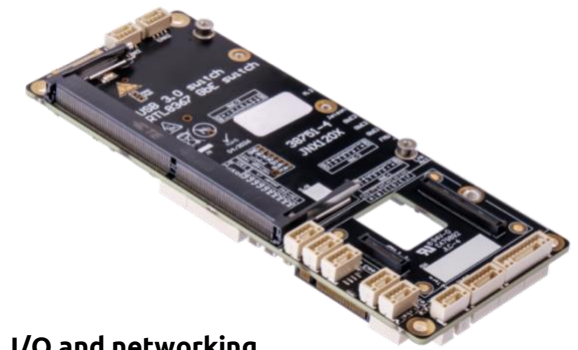
Overview

The JNX120X is our smallest Jetson carrier board with an **integrated PAB (Pixhawk Auto Pilot Bus)** slot - with only 121mm x 50mm.

The JNX120X is a modern drone carrier board which is **CAN centric** and targeted for small to large drones.

Key Features

- compact design
- minimized height: standoff height 2.5mm
 - 4mm less height compared to standard Jetson carrier boards
- low profile height (incl. heat spreader): 20mm
- lightweight design
- super mode support for Orin Nano and NX
- MCU (optional watchdog)
- PAB (Pixhawk Auto Pilot Bus) slot
- power in: 12V to 24V
 - reverse voltage protection
 - inrush current limitation



I/O and networking

- 3 CAN buses with 11 connectors
- FC UARTs: 4+ M.2 GPS (2) + internal to Jetson
- Industrial USB 2.0 hub (for long USB cables)
- RTL8367 Gigabit Ethernet switch
 - 3 external GbE ports
 - GbE to the Jetson module
 - 100Mbit connection to the flight controller
- I2C
- 2 config GPIOs for M.2 key B card detection

Camera support

- 2 USB micro-coax thermal cameras (JNX121: 1x CSI-2)
- 2 CSI-2 micro-coax color cameras
- 5V/3.3V supplied on USB micro-coax connectors

Technical Specification

	JNX120X	JNX121
Compatible modules	Orin Nano/NX	
Super mode support	✓ (with Jetpack 6.2)	
Crypto chip	optional (ATSHA204A)	
TPM chip	optional (SLB9670VQ20FW785XTMA1)	
UARTs (FMU)	4x external, 1x internal (Jetson), 2x internal to M.2 key B	
MIPI CSI-2	2x (4 lanes)	2x (2 lanes), 1x (4 lanes)
M.2 key M (SSD)	2230 (PCIe x4)	
M.2 key E 2230 Wifi (AX210)	USB 2.0 and PCIe x2	
M.2 key B (LTE or 5G)	UAB and PCIe x1	
PAB (Pixhawk Auto Pilot Bus) slot	✓	
CAN connectors	8+2+1	
FMU PWM	8	
RC (SBus and Telem2)	✓	
5 port Ethernet switch	3x GbE external	
Power in	12 to 24V	
Size	121mm x 50mm	
Weight	47.2 grams	
Height	Low profile	
Model number	38751-5	
SKU	70915	tbd

Specifications subject to change without notice. All trademarks are property of their respective holder.

JNX 12x PAB carrier

Cooling solutions

SKU	Part
70812	FAN integrated heatsink
70812-C	Heatsink industrial
70812-P	Passive heatsink
70696	Leaf spring kit
70606	Heatspreader
70798-OK	Cooling kit
70810-OK	Cooling kit industrial
70810-CP	Super mode copper heatsink kit*

*recommended when using super mode

GPIO signal configuration*

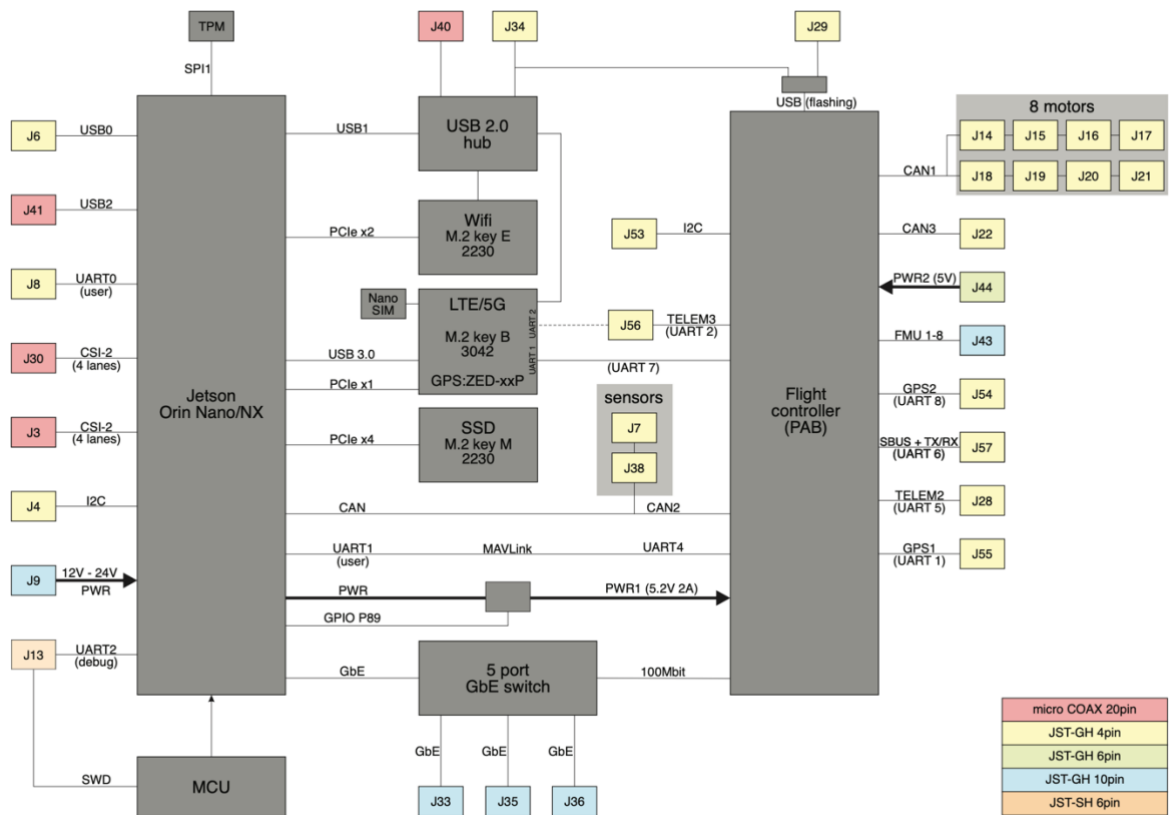
SOM #pin	Signal name	Line name	Function	State 0	State 1
89	SPI0_MOSI PZ05	PZ.05	FMU power	0=power FMU 5.2V	1=discharge FMU rev 3
rev5+: 228	rev5+: GPIO_PH0_p228 (camera side TRIG)**	PH.00	J3, J30, J40, J41 Trigger signal (Pin 3 and 17)	0	1
rev1-4: 228	rev1-4: GPIO_PH0_p228	rev1-4: PH.00	FMU reset	0=Run FMU	1=Reset FMU (1)
rev5+: 93	rev5+:GPIO_PZ4_p93	rev5: PZ.04	FMU reset	0=Run FMU	1=Reset FMU (1)
128	GPIO3_PCC02_p128	PCC.02	GbE power	0=GbE power down	1=GbE Enable
226	GPIO3_PA04_p226	PA.04	GbE reset	0=Run GbE	1=Reset GbE
126	GPIO3_PCC00_p126	PCC.00	V_USB2	0=enable USB power	1=disable USB power
207	GPIO3_PR04_p207	PR.04	USB-hub reset	0=Run USB hub	1=reset USB hub
124	GPIO3_PP06_p124**	PP.06	J41 USB camera PWDN signal	0=power on USB cam	1=power down USB cam
114	CAM0_PWDN**	PH.06	cs1-0	0=PwrDonw csi-0	1=Run csi-0
120	CAM1_PWDN**	PAC.00	cs1-1	0=PwrDonw csi-1	1=Run csi-1

*Please note that some signals may not be configurable from user space, as they are statically defined in the device tree for the JNX12x

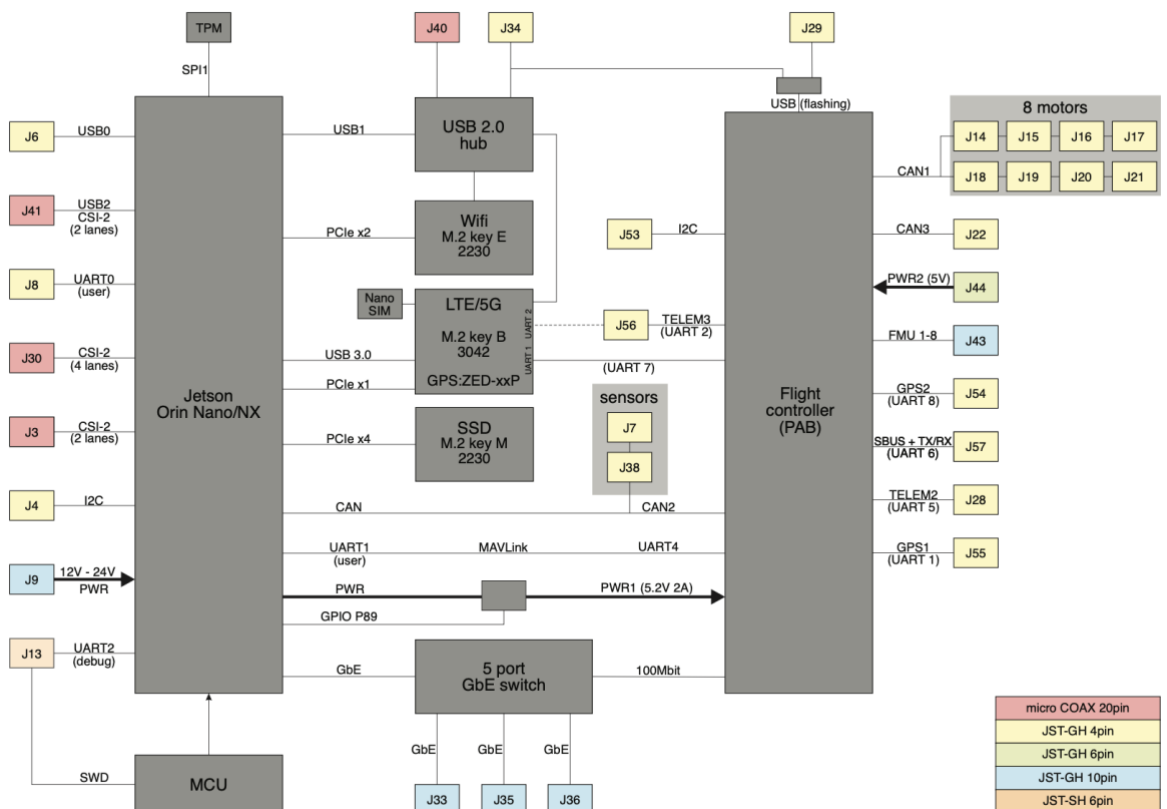
**Depending on the connected camera module, the polarity may be inverted, as different cameras may use either active-high or active-low signaling for these functions.

JNX 12x PAB carrier

JNX120X rev 5 block diagram



JNX121 block diagram



JNX 12x PAB carrier