



**LEOPARD**  
IMAGING

# LI-AGO-BOX-FP4X



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## INTRODUCTION

The LI-AGO-BOX-FP4X consists of NVIDIA Jetson AGX Orin SOM, LI AGX Orin carrier board, and De-Serializer adapter board with FPDLINK-IV TI9702 or TI9724. This product supports up to 8 FPDLINK cameras which are equipped with FPDLINK-IV TI971 serializers.

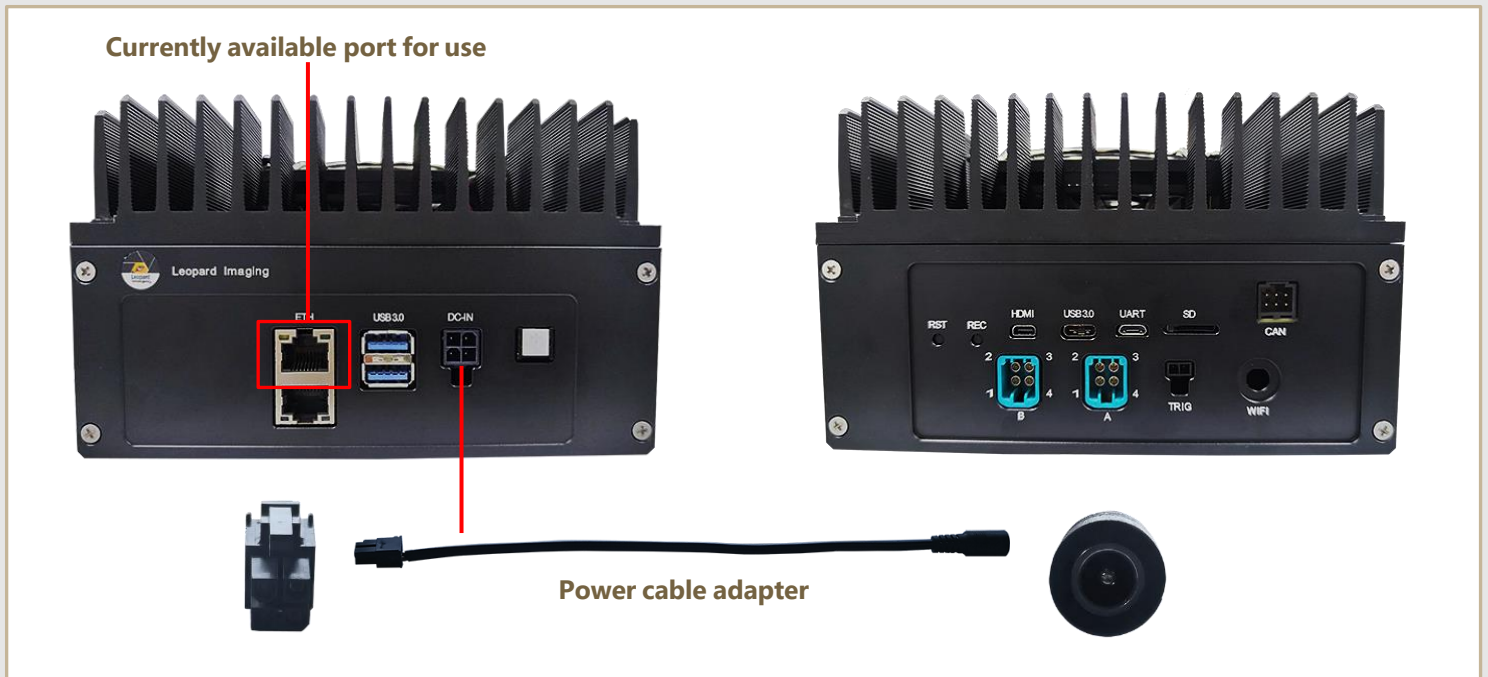
## KEY FEATURES

- NVIDIA Jetson AGX Orin SOM: included
- Arm Cortex-A78AE CPU  
8 x Arm Cortex-A78AE cores | 2 CPU clusters (4 cores/cluster) | 177 SPECint\_rate2006  
Arm® v8.2 (64-bit) | Symmetric multi-processing (SMP) | NEON SIMD | High-performance coherent interconnect fabric  
L1 Cache: 64 KB Instruction Cache (I) + 64 KB Data Cache (D) per CPU core  
L2 Cache: 256 KB per CPU core  
L3 Cache: 2 MB per CPU cluster
- NVIDIA Ampere GPU:  
Includes CUDA cores, Ray-Tracing (RT) cores and 3rd Generation Tensor cores | Enhanced compute capability  
2 GPC | 7 TPC | Up to 108 INT8 Sparse TOPS or 54 FP16 TFLOPS | Up to 3.365 FP32 TFLOPS or 6.73 FP16 TFLOPS (CUDA cores)
- Vision and DNN Accelerators  
2x Deep Learning Accelerator (DLA) | 2MB dedicated SRAM  
Up to 98 INT8 TOPS (Deep Learning Inference)  
Programmable Vision Accelerator (PVA) | Up to 512 INT16 GMACS or 2048 INT8 GMACS | 2MB dedicated SRAM
- Platform Security Controller (PSC)  
RISC-V subsystem, PKC crypto (RSA3K)
- Sensor Processing Engine (SPE)  
Arm Cortex R5 processor | Always-on (AON) cluster
- On-Chip Memory: 4MB system cache
- Memory Subsystem  
Memory Type: 256-bit LPDDR5  
Maximum Memory Bus Bandwidth (up to) : 204.8 GB/s  
Maximum Capacity: 32 GB  
Memory encryption support | 2-stage CPU MMU and SMMU, GPU MMU | Lossless memory bandwidth compression for GPU R/W
- Video Interface  
16x lanes total | D-PHY v2.1 (40 Gbps)  
16x trio links total | C-PHY v2.0 (164 Gbps)
- Multi-Stream HD Video and JPEG  
Video Decode: H.265 (HEVC), H.264, AV1, VP9, VP8, MPEG-4, MPEG-2, VC-1  
Video Encode: H.265 (HEVC), H.264, AV1  
JPEG (Decode & Encode)  
Optical Flow Accelerator:  
-- Optical Flow  
-- Stereo Disparity Estimation
- Storage  
64GB internal eMMC 5.1 | Bus Width: 8-bit | Maximum Bus Frequency: 200 MHz (HS400 or HS533)  
64 MB NOR Boot Flash (QSPI)  
8 MB NOR Secure Key Flash  
1 x M.2 PCIe interface  
1 x Micro SD card interface
- Ethernet: 10/100/1000 BASE-T Ethernet
- WIFI & Bluetooth: NOT supported by default. Please contact sales if needed.
- Camera: two 4T1 Fakra connectors for 8 cameras maximally  
4T1 mating connector: 2298721-9
- Connector: FAKRA Z TYPE
- DeSerializer: FPDLINK-IV TI9702 or TI9724
- Single Coax Cable transmits up to 12 meters PoC (Power over Cable)
- Input power supply range: 12 ~ 36 VDC
- Power consumption: 1.65 A @ 19VDC (Running with 4 cameras)
- Operating temperature: -25°C ~ +60°C
- Weight: 2.0 KG
- Dimensions: 160 (L) x 129 (W) x 99 (H) mm
- Part#: **LI-AGO-BOX-FP4X**

<b>LI-AGO-BOX-FP4A</b>	Equipped with FPDLINK-IV TI9702 De-Serializer
<b>LI-AGO-BOX-FP4B</b>	Equipped with FPDLINK-IV TI9724 De-Serializer

## INTERFACES

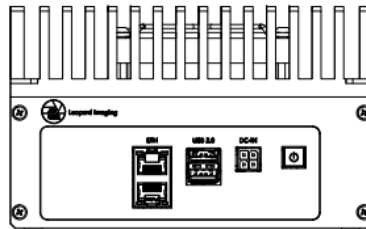
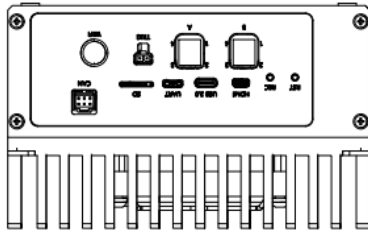
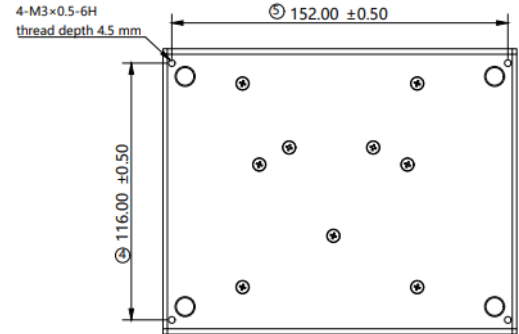
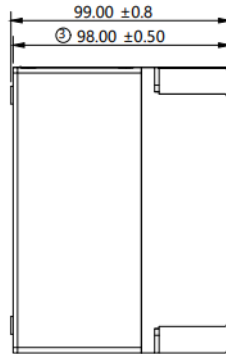
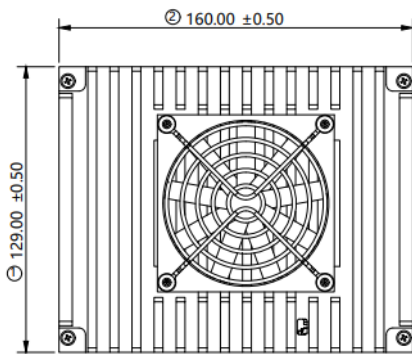
- 2 x 4T1 Fakra connectors for camera connection (support up to eight cameras)
  - 1 x Micro HDMI connector
  - 1 x USB 3.0 Type-C interface
  - 1 x USB 2.0 Micro-B interface (UART)
  - 1 x Micro SD card interface
  - 1 x CAN connector
  - 1 x TRIG connector
  - 1 x Power socket (DC 19V)
  - 2 x USB3.0 Type-A interfaces (stacked)
  - 2 x RJ45 Gigabit Ethernet interfaces (stacked, only the one on the top could be used)
  - 2 x M.2 PCIe interfaces (one for wireless, one for SSD)
- NOTE:** These two interfaces are inside the box, which require to open the outer case to install.
- REC, RST and PWR buttons included



## BOM

#	Items	Part Number	QTY	Unit
1	AGX Orin FPDLINK-IV Box	LI-AGO-BOX-FP4A, or LI-AGO-BOX-FP4B	1	Piece
2	19 VDC power supply	LI-PS19-01 (19V, 4.74A Power Adapter & Cable)	1	Set
3	Power cable adapter (for testing only)	LI-DC-4POS-18AWG-30CM	1	Piece

## DIMENSIONS



TOLERANCE TABLE					
LENGTH TOLERANCE		CHAMFER TOLERANCE		ANGLE TOLERANCE	
Size X	Tolerance	Size X	Tolerance	Size X	Tolerance
0.5 < X ≤ 3	±0.1	0.5 < X ≤ 3	±0.2	X ≤ 10	±1°
3 < X ≤ 6	±0.1	3 < X ≤ 6	±0.5	10 < X ≤ 50	±30'
6 < X ≤ 30	±0.2	6 < X ≤ 30	±1	50 < X ≤ 120	±20'
30 < X ≤ 120	±0.3			120 < X ≤ 400	±10'
120 < X ≤ 400	±0.5				
400 < X ≤ 1000	±0.8	X > 30	±2	X > 400	±5°
X > 1000	±1.2				

### NOTE:

- ⊗ marked are important sizes.
- Tolerances for others unmarked refer to the Tolerance table.
- All materials are compliant with RoHS requirements.

Unit: mm

## ● REVISION HISTORY

Revision	Description	Release Date
1.0	First release.	19 Dec 2023

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