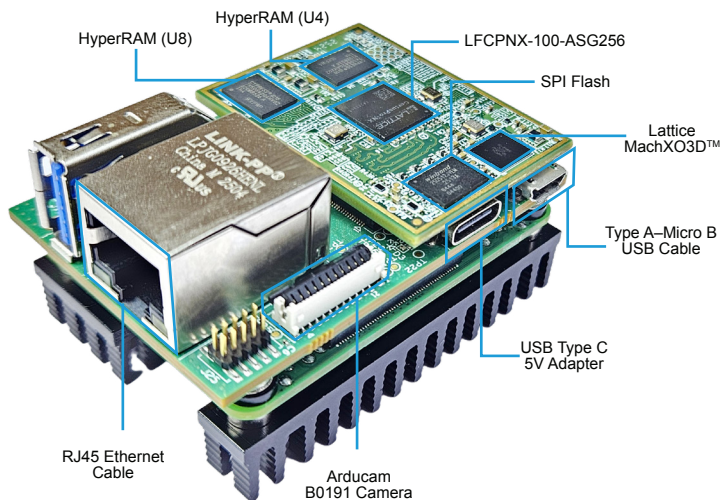


This document provides a brief introduction to the LFCPNX-NX SOM sensAI Kit. This kit is a cutting-edge System on Module (SoM) built on the LFCPNX-256BGA FPGA, designed for resource-constrained Edge AI applications.



1

Check Kit Contents

The LFCPNX-NX SOM sensAI Kit contains the following:

Sl No	Description	Part Number/Manufacturer	QTY
1	LFCPNX-NX SOM sensAI Kit	PN: LFCPNX-SOM-EVN Rev C, MFG: Lattice	1
2	Generic Carrier HW Board	PN: LF-GEN-CR-PCBA Rev A, MFG: Lattice	1
3	Raspberry PI CM5	PN: SC1601, MFG: Raspberry Pi	1
4	Raspberry PI CM5 Passive Cooler	PN: SC1752, MFG: Raspberry Pi	1
5	IMX219 Camera with regular (narrow) FOV	PN: (ArduCam B0191), MFG: Arducam	1
6	22-22 RPI 5 Camera Cable 200 mm	PN: B0BQ72Q33C, MFG: SHIVLAHERI	1
7	USB Cable Type A Male to Type C Male 3.00'	PN: U428-003-G2, MFG: Eaton Tripp Lite	1
8	IMX219 Camera holder	PN: R213343 (web store SKU), MFG: KKSBB	1

9	5 V 25 W AC DC External Wall Mount (Class II) Adapter Multi-Blade (Sold Separately) Input	PN: WR9QA5000USBCNAN (R6B), MFG: GlobTek, Inc.	1
10	Input plug for wall adapter ¹	PN: Q-KIT®, MFG: GlobTek, Inc	1
11	Modular Cable Plug to Plug 8p8c (RJ45, Ethernet) 3.28' (1.00m) Shielded	PN: BC-5SG010M, MFG: Bel Inc.	1
12	USB 2.0 Cable Type A Male to Micro B Male 3.28' (1.00 m) Shielded	PN: CBL-UA-MUB-1 MFG: Harwin Inc.	1
13	Conn Shunt 1.27 mm black handle – Used to enable eMMC write mode on the CM5	PN: M50-2000005 MFG: Harwin Inc.	3

Static electricity can shorten the lifespan of electronic components. Please observe these tips to prevent any damage that could occur from electro-static discharge:

- Use anti-static precautions such as operating on an anti-static mat and wearing an anti-static wristband.
- Store the board in anti-static packaging.
- Touch the metal housing to equalize voltage potential between you and the board.

2

Using the LFCPNX-NX SOM sensAI Kit

The LFCPNX-NX SOM sensAI Kit is shipped with a CPNX SoM for the multi-object detection demonstration.

3

Installing the Software

- To develop your own solutions, download and use Lattice Radiant (version 2024.2 or later) and Lattice Propel (version 2024.2 or later).
- If you only need to reprogram the board, you can use the Radiant Programmer Stand-alone Software (version 2024.2 or later).

4

Powering the Boards and Observing the Demo Program

- Assemble the IMX219 camera on holder with the help of assembly guide link. <https://thepihut.com/blogs/raspberry-pi-tutorials/adjustable-camera-mount-assembly-guide>
- Connect IMX219 camera to MIPI connector on SOM Assembly.
- Connect Ethernet cable from user machine to SOM Assembly.
- Place camera at desired location.
- Connect Power Supply to SOM Assembly.

- Connect via SSH to 10.10.1.1. Log in as “lattice” username and “lattice” password. Open Command Prompt (For Windows) or Terminal (For MacOS).
- Type “ssh lattice@10.10.1.1” as command.
- Provide “lattice” as password.
- Run “run_edge_hub” in command line.

```
C:\Users\spethar>ssh lattice@10.10.1.1
The authenticity of host '10.10.1.1 (10.10.1.1)' can't be established.
ED25519 key fingerprint is SHA256:3V1QSHLWXVYInEcSpZDUHaUS8vFE89En0y89MBQHue.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.10.1.1' (ED25519) to the list of known hosts.
lattice@10.10.1.1's password:
Linux lattice-hub 6.12.25-rpt-rpi-2712 #1 SMP PREEMPT Debian 1:6.12.25-1+rpt1 (2025-04-30) aarch64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Fri Dec 12 23:48:17 2025
lattice@lattice-hub:~$
lattice@lattice-hub:~$ run_edge_hub
```

- Open browser and run http://10.10.1.1:5000.
- Change resolution of web browser with Ctrl+- and Ctrl++ as required to fit for display.
- Go to 2nd tab – Live Streaming. Click on “Start Stream” button.
- You can start seeing the object detection on the Video.
- Refer to the CertusPro™-NX Multi-Object Detection on SOM Board Demo User Guide (FPGA-UG-02247-1.0) for the step-by-step power-up instructions and demo program observations for the MOD demonstration.

5

Doing more with the CPNX SoM Edge Ai Kit

Check the Lattice website latticesemi.com/products/developmentboardsandkits/certuspro-nx-system-on-module-board to download the full user guide ,the full source code of the default demo, and other resources. You can use the Lattice Radiant and Propel software tool to develop and program your own demos.

Additional Terms and Conditions Applicable to Lattice Programming and Development Hardware

Lattice device programmers, programming cables, socket adapters, and other hardware sold for use in conjunction with Lattice software (“Programming Hardware”) and Lattice evaluation boards and development kits sold for use in conjunction with evaluating Lattice products (“Development Hardware”) are designed and intended for use solely with semiconductor components manufactured by Lattice Semiconductor Corporation. Programming and Development Hardware is warranted to meet Lattice specifications only for a period of ninety (90) days; in all other respects the terms and conditions of sale of Programming and Development Hardware shall be Lattice’s standard terms and conditions set forth in Lattice’s Sales Order Acknowledgment. Additionally, Lattice specifications for Programming and Development Hardware limit their use to low-volume engineering applications only, and not for volume production use. The warranty for Programming and Development Hardware will not apply to any Programming or Development Hardware used in production, used with worn or improperly installed hardware, or used with incompatible systems or components.

Technical Support

www.latticesemi.com/support

Copyright © 2026 Lattice Semiconductor Corporation. Lattice Semiconductor, L (stylized) Lattice Semiconductor Corp., Lattice (design) are either registered trademarks or trademarks of Lattice Semiconductor Corporation in the United States and/or other countries. Other product names used in this publication are for identification purposes only and may be trademarks of their respective companies.