NVIDIA DRIVE AGX Thor Developer Kit

Hardware Quick Start Guide

Document History

DU-12082-001_1.3

Version	Date	Description of Change
1.0	July 18, 2025	Initial release
1.1	August 29, 2025	Updated the following: • Table 1: Added Model numbers • Power: Updated AC and DC Power Connector sections • Versions: Updated production part numbers
1.2	October 9, 2025	Updated the following: • Introduction: Updated link for NVIDIA DRIVE AGX SDK Developer Program • Added note to Table 5 for cable ordering details
1.3	August 21, 2026	Updated Introduction: Added links for hardware accessories, configuration of development environment

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Introduction

Before You Begin

This hardware quick start guide provides the basic steps needed to get your NVIDIA DRIVE AGX Thor™ Developer Kit (hereinafter referred to simply as **developer system**) up and running. The developer system ships with NVIDIA DriveOS™ pre-installed.

For more details beyond this hardware quick start guide, refer to the NVIDIA DRIVE AGX Documentation page for the latest information:

- NVIDIA DRIVE AGX Thor Developer Kit Product Brief
- NVIDIA DRIVE AGX Thor Developer Kit Mechanical and Installation Guide
- Hardware accessories, which may be purchased separately
- Details regarding configuration of your development environment

Developers are required to join as an NVIDIA Developer and be part of the NVIDIA DRIVE AGX SDK Developer Program to obtain access to software releases, documentation, and up-to-date information.

Note: Files marked with a lock icon require membership to the NVIDIA DRIVE AGX™ SDK Developer Program.

NVIDIA DRIVE AGX Thor Developer System Hardware

Product SKUs

To support Bench and In-Vehicle development, the developer system is offered in two different configurations, referred to as SKUs, as shown in the following table. The two SKUs differ only in their power input; all other features are the same.

Table 1. Product SKUs

SKU	Details	Model Number
10[1]	Bench Solution – AC power input	P3960F
12	In-Vehicle Solution – DC power input	P3960D

Note1: SKU 10 is intended for bench development only; in-vehicle use is strictly prohibited.

Components

The following table lists the hardware components and accessories provided with the developer system, with corresponding illustrations shown in Figure 1.

Table 2. NVIDIA DRIVE AGX Thor Developer System Hardware List For SKU 10

No.	Item	Qty	Description
1	Developer System SKU 10	1	DRIVE AGX Thor Developer System
2	1G NIC Adapter	1	Converts H-MTD 1000BASE-T1 to RJ45 1000BASE-T
3	USB Cable Type A-to-C	2	USB Cable with Type-A and Type-C Connectors
4	USB Cable Type C-to-C	1	USB Cable with Type-C and Type-C Connectors
5	MATE-AX x4 to FAKRA Splitter	1	Breakout cable for MATE-AX x4 position connector to x4 FAKRA connectors. Same breakout cable is used for camera and display MATE-AX rear panel connectors.

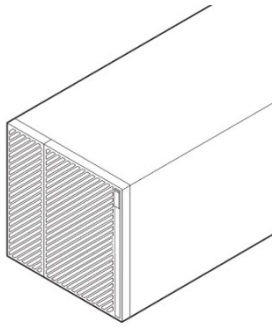
No.	Item	Qty	Description
6	H-MTD x4 Splitter	1	Breakout cable for H-MTD x4 position connector used for Ethernet
7	H-MTD x6 Splitter	1	Breakout cable for H-MTD x6 position connector used for Ethernet

Table 3. NVIDIA DRIVE AGX Thor Developer System Hardware List For SKU 12

No.	Item	Qty	Description
1	Developer System SKU 12	1	DRIVE AGX Thor Developer System
2	Vehicle Harness Cables	1	Cables to interface the developer system to the vehicle
3	1G NIC Adapter	1	Converts H-MTD 1000BASE-T1 to RJ45 1000BASE-T
4	USB Cable Type A-to-C	2	USB Cable with Type-A and Type-C Connectors
5	USB Cable Type C-to-C	1	USB Cable with Type-C and Type-C Connectors
6	MATE-AX x4 to FAKRA Splitter	1	Breakout cable for MATE-AX x4 position connector to x4 FAKRA connectors. Same breakout cable is used for camera and display MATE-AX rear panel connectors.
7	H-MTD x4 Splitter	1	Breakout cable for H-MTD x4 position connector used for Ethernet
8	H-MTD x6 Splitter	1	Breakout cable for H-MTD x6 position connector used for Ethernet
9	Mounting tray	1	The tray to hold the developer system in a vehicle

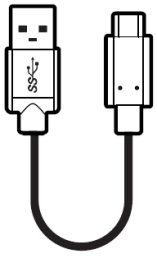
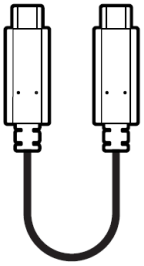
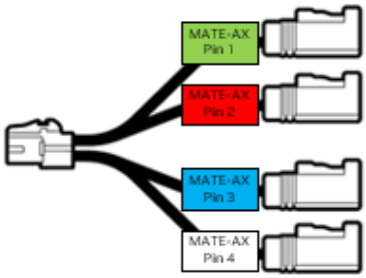
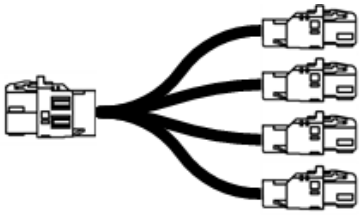
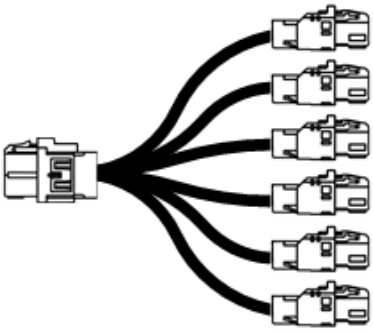
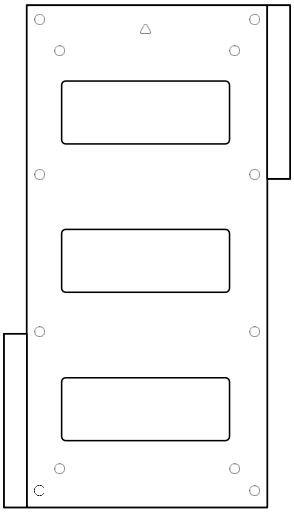
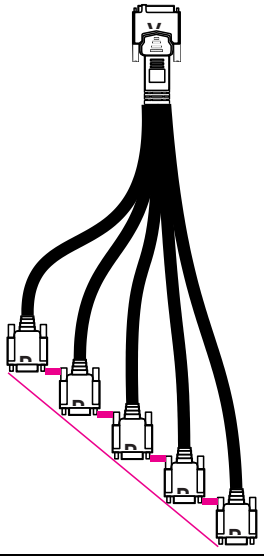
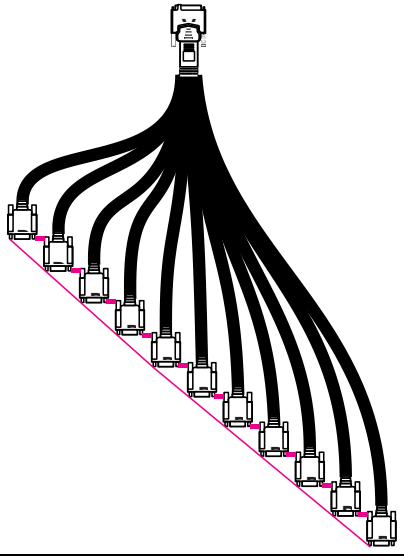
Figure 1. NVIDIA DRIVE AGX Thor Developer System Components

⚠ **Disclaimer:** The line-art images shown here are for illustration purposes only. Your developer system accessories may differ due to product enhancements, modifications, and substitutions.



Developer System (SKU 10 or SKU 12)

1G NIC Adapter

		
USB Cable Type A-to-C	**USB Cable Type C-to-C**	**MATE-AX x4 to FAKRA Splitter**
		
H-MTD x4 Splitter	**H-MTD x6 Splitter**	**Mounting Tray (SKU 12 Only)**
		
Vehicle Harness Cable 1 (SKU 12 Only)	**Vehicle Harness Cable 2 (SKU 12 Only)**	

Connectors

The developer system supports a broad range of connectors, as shown in Figure 2 and Figure 3.

Note: Refer to the *DRIVE AGX Thor Developer Kit Mechanical and Installation Guide* for details.

Figure 2. Rear Panel Connectors for Bench Developer System (SKU 10)

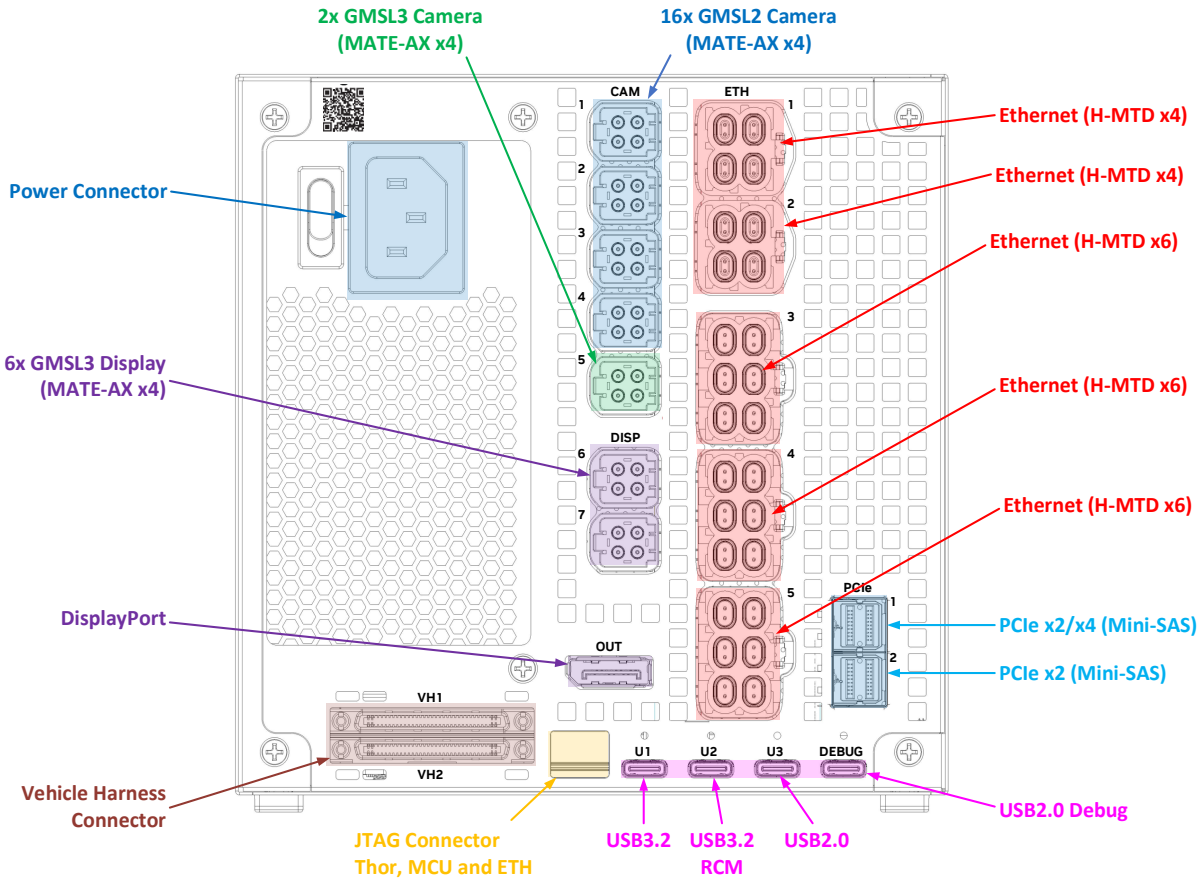
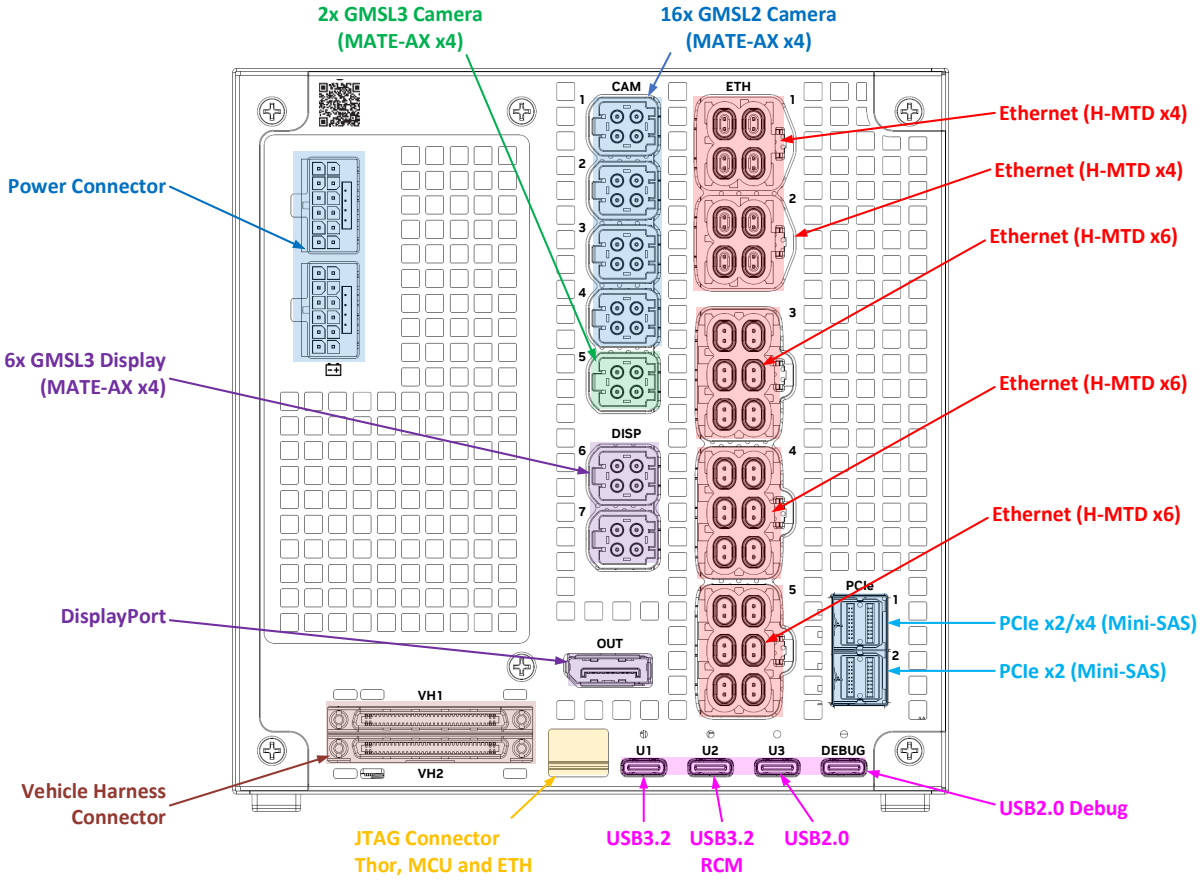


Figure 3. Rear Panel Connectors for In-Vehicle Developer System (SKU 12)



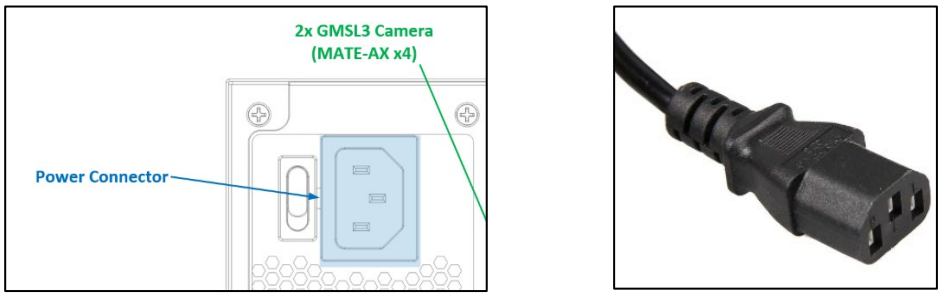
Caution: To prevent overheating, it is important to take airflow into consideration when mounting the developer system. Refer to the *DRIVE AGX Thor Developer Kit Mechanical and Installation Guide* for details.

Power

AC Power Connector

The Bench developer system (SKU 10) uses an AC power input with an IEC 60320 C14 inlet. The international rating of this connector is 250VAC/10A and a 16 AWG power cord at a minimum should be used. Figure 4 shows the zoomed-in location of the AC power connector on the rear panel on the left, and a power cord with an IEC 60320 C13 connector on the right. AC power cord must be purchased separately.

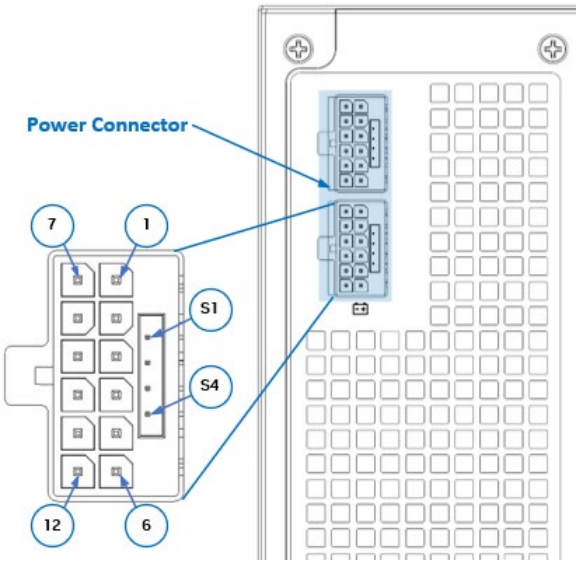
Figure 4. AC Power Connector and Cord (SKU 10)



DC Power Connector

The In-Vehicle developer system (SKU 12) uses a DC power input. Figure 5 shows the zoomed-in location of the DC power connector on the rear panel. Refer to the *DRIVE AGX Thor Developer Kit Mechanical and Installation Guide* (DI-12070-001) for pinout details.

Figure 5. DC Power Connector (SKU 12)



Additional Hardware and Accessories

This section provides information on additional hardware components required for the developer system as well as optional accessories that expand the usage of the developer system.

The following table lists additional hardware components required for the developer system.

Table 4. Additional Hardware Required

Item	Description
1	VESA® DisplayPort™ Display with DisplayPort Cable[1]
2	Ubuntu Host PC for Cross-Compiling, Flashing, and Console Access
3	Ethernet Cable for Networking Access
4	Keyboard
5	Mouse

Note1: The developer system does not support passive DP to HDMI adapters; an ACTIVE DP-to-HDMI or DP-to-DVI adapter may be used with HDMI or DVI displays. The display must support 1080P resolution. Refer to the *NVIDIA DriveOS [Linux | QNX] SDK Developer Guide* for information about supporting displays of different resolutions.

PCIe Mini-SAS

Multiple developer systems can be connected using the PCIe interfaces and Mini-SAS cables. Table 5 lists the PCIe mini-SAS cables that are compatible with the developer system.

Note: The developer system uses a customized Mini-SAS pin definition with additional sideband signals to synchronize the PCIe link between developer systems. Standard PCIe Mini-SAS cables will **NOT** work.

Table 5. PCIe Mini-SAS Cables

Description	Mfg P/N
Amphenol Mini-SAS cable assembly, 0.5m length	NMDDKF-N906
Amphenol Mini-SAS cable assembly, 1.0m length	NMDDKF-N901
Amphenol Mini-SAS cable assembly, 2.0m length	NMDDKF-N902

Note: Refer to https://cablesondemand.com/contact-us for details on how to purchase the Mini-SAS cables.

Additional Accessory Purchase Information

The following table provides the manufacturer's part numbers in case additional accessories need to be purchased.

Table 6. Accessory Manufacturers and Part Numbers

Label	Manufacturer	Mfg P/N
USB Cable Type A-to-C	Simula Technology, Inc	CB8A5E-6200-10F
USB Cable Type C-to-C	Wieson America Inc.	AB9932-0011-001-HH
MATE-AX x4 to FAKRA Splitter[1]	TE Connectivity Ltd.	2488334-3
H-MTD x4 Splitter	MD Elektronik GmbH	10472867
H-MTD x6 Splitter	MD Elektronik GmbH	10472869
CEM5 Hybrid Receptacle Housing	Amphenol	10161719-124GLF

Note1: Contact TE at nvidia-orders@md-elektronik.com for details on how to purchase the splitter cable.

Refer to DRIVE AGX Thor Accessories for additional DRIVE AGX Thor developer system hardware accessories for purchase directly from NVIDIA or from Authorized Distributors.

Versions

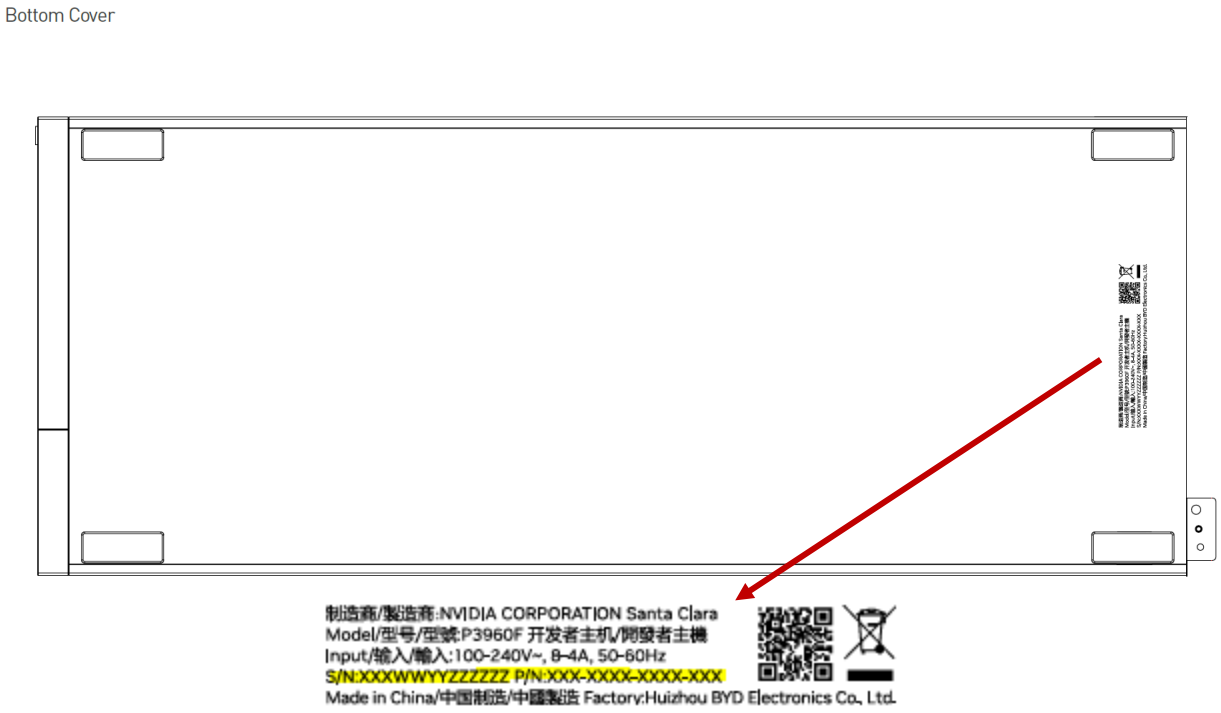
The DRIVE AGX Thor developer system production versions are listed below.

- Production SKU 10: 940-63960-0010-000 (AC power cords not included)
- Production SKU 12: 940-63960-0012-000 (DC power connector not included)

Locating NVIDIA Part Number (NVPN) and Serial Number (S/N)

The NVIDIA NVPN and S/N are located on the bottom cover, rear side/back panel of the unit, as shown in Figure 6.

Figure 6. NVIDIA NVPN and S/N Location



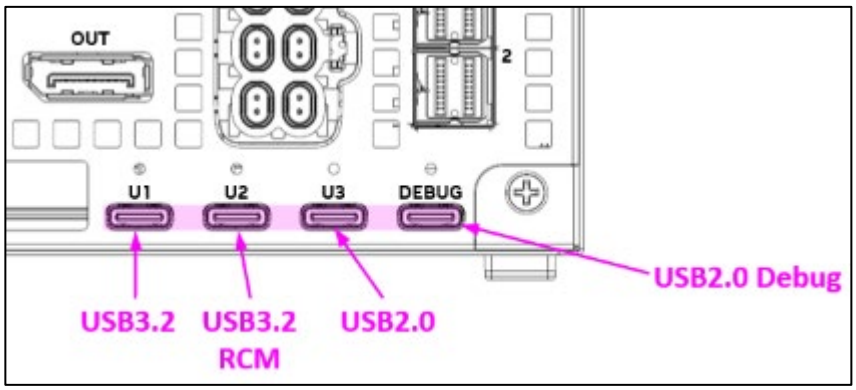
Getting Started

To get started with DRIVE AGX, scan the QR code on the back panel of the developer system; this will take you to the DRIVE AGX - Get Started | NVIDIA Developer website.

To use your developer system for the first time, you will need the following:

- Main AC Power Cable
- Two USB cables, Type A-to-C or Type C-to-C
- DisplayPort Cable (optional)
- Monitor supporting 1080P resolution
- Keyboard (optional)
- Mouse (optional)
- Ubuntu 24.04 Host PC
- Network Ethernet port that supplies IP address via DHCP (optional)

Figure 7. Rear Panel of the Developer System

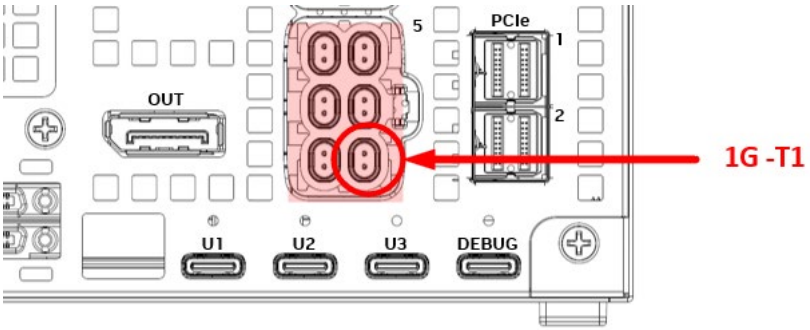


Use the following steps to get your **developer system** up and running:

1. Connect the **Main AC Power Cable** to the **developer system**.
2. Connect the first **USB cable Type C**-to-**A** (or **Type C**-to-**C**, depending on your Host PC) from the **Ubuntu Host PC** to the developer system USB Type-C port labeled “DEBUG,” which is a USB 2.0 port.
3. Connect the second **USB cable Type C**-to-**A** (or **Type C**-to-**C**, depending on your Host PC) from the **Ubuntu Host PC** to the developer system **USB Type C** port labeled “U2.” This USB connection is used for recovery mode flashing.

4. Connect a **DisplayPort monitor** to the DisplayPort labeled “OUT.” Note the monitor must support the default developer system resolution of 1080P.
5. Connect a keyboard and mouse to the USB Type C port labeled “U1” or “U3”.
6. Networking Connections:
   - 1G NIC Adapter only works with 1G-T1 port

Figure 8. 1G-T1 H-MTD Connector



Refer to the *DRIVE AGX Thor Developer Kit Mechanical and Installation Guide* (DI-12070-001) for Ethernet port details.

7. Press the **Main Power Switch** to the **ON** position.
8. Initial Setup:
   a. If Display is connected, follow on-screen display to accept the End User License Agreement (EULA), set username and password, SSH profile, and additional users.
   b. If Display is not detected, type NO on Thor’s UART console to run the initial setup steps on the console. Refer to the Terminal Emulation section in the DriveOS 7.0 Linux SDK Developer Guide for more information on setting up a terminal emulator on the Ubuntu Host PC.

After completing these prompts, the platform boots to the Ubuntu Desktop user interface (if display is connected) and login prompt on the UART console. To configure your development environment, visit the NVIDIA DRIVE AGX Thor Setup page for more detailed information.

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