

BOARD SUPPORT PACKAGE

For Connect Tech NVIDIA® Jetson AGX Orin™ Carriers

BSP Version:	ORIN-AGX-39.2.0 V001
Last Updated:	2026/07/08

1. Introduction

This Board Support Package adds support for the Connect Tech Jetson AGX Orin™ family of carrier boards to Linux4Tegra. It includes any extra files required to use all the features of Connect Tech carriers.

Please check Section 3 for supported features for your board and Section 9 for the changes made between versions. You can check which version of the BSP you have installed by running:

```
cat /etc/cti/CTI-L4T.version
```

Check for the Latest Version of the CTI-L4T BSP at:
<https://connecttech.com/resource-center/l4t-board-support-packages/>

2. Requirements

- x86/x64 based host machine running Ubuntu 20.04 or 22.04
- JetPack 7.2 / L4T 39.2.0 installed (see Section 4)
- AGX Orin™ module
- Connect Tech AGX Orin™ Carrier
- USB Cable for flashing

*L4T version can be found in /etc/nv_tegra_release and will look like this:
R39 (release), REVISION: 2.0

3. BSP Features

3.1 Supported Modules in BSP

- AGX Orin™ 32GB
- AGX Orin™ 64GB

- AGX Orin™ Industrial

3.2 Supported Cameras in BSP

No camera configurations in this release.

3.3 Product Specific Details

AGX201 (Forge)

- 10G and 1G ethernet Support.
- CAN Support.
- Display Port Support.
- USB 3.2 Support.
- USB OTG Support.
- I2C Support.
- SPI Support.
- UART Support.
- RS232/485 Support.
- GPIO Support.
- M.2 pcie Support.
- Key E 2230 Wifi/BT.
- Key B 3042/3052 LTE/5G with micro SIM.
- Micro SD support.
- Oculink support
- Endpoint Mode not Supported

AGX202/AGX203 (Rogue-Orin/ Rogue-RX)

- x2 10G ethernet Support.
- CAN Support.
- HDMI Support.
- USB 3.2 Support.
- USB OTG Support.
- I2C Support.
- SPI Support.
- UART Support.
- GPIO Support.
- M.2 pcie Support.
- Key E 2230 Wifi/BT.
- Micro SD support.

AGX205 (Rogue-Essential)

- 1G ethernet Support.
- M.2 pcie Support.
- UART Support.

AGX207 (Rogue-RX-XP)

- x2 10G ethernet Support.
- CAN Support.
- HDMI Support.
- USB 3.2 Support.
- USB OTG Support.
- I2C Support.
- SPI Support.
- UART Support.
- RS232 Support.
- DS4520 Non-Volatile Jumper Block Support.
- GPIO Support.
- M.2 pcie Support.
- Key E 2230 Wifi/BT.
- Micro SD support.

AGX901 (USES)

- 1G ethernet Support.
- M.2 pcie Support.
- UART Support.
- USB OTG Support.

3.4 Limitations and Known Issues

1. Due to firmware and bootloader limitations there is no way to move a module flashed from one AGX Orin™ carrier to another without reflashing. This includes the NVIDIA® Devkit. This means a module flashed for the AGX Orin™ Devkit cannot be used with a CTI carrier without reflashing the module.

2. OEM setup through console is currently not supported. If you are working with a headless setup, setup a user within Linux_for_Tegra before flashing.

User setup script:

```
tools/l4t_create_default_user.sh -u <username> -p <password> -a //a for autologin
```

4. Installation

4.1 Obtaining NVIDIA® Jetpack

Before Installing the BSP you will need to install JetPack 7.2 on the host system using NVIDIA® SDK Manager (section 4.1.1) or from the NVIDIA® Embedded Download Center (section 4.1.2)

4.1.1 Installing JetPack from SDK Manager

Please follow installation steps from kdb373 for Jetpack 4.2+ <https://connecttech.com/resource-center/kdb373/>

4.1.2 Installing JetPack from NVIDIA® Embedded Download Center

1. Create a new directory for installing the Jetpack. Referred to as <BSP_ROOT> in these instructions.

2. Go to Jetpack Release Page

<https://developer.nvidia.com/embedded/jetpack/downloads/archive-7.2>

3. Download the "L4T Driver Package (BSP)" and "Sample Root Filesystem" files for AGX Orin™

4. Put the "L4T Driver Package (BSP)" and "Sample Root Filesystem" in <BSP_ROOT>. Afterwards, you should have the following files in <BSP_ROOT>

- jetson_linux_r39.2.0_aarch64.tbz2
- tegra_linux_sample-root-filesystem_r39.2.0_aarch64.tbz2

5. Extract the "L4T Driver Package" tarball:

```
cd <BSP_ROOT>
sudo tar -jxf jetson_linux_r39.2.0_aarch64.tbz2
```

6. You should now have a new directory called Linux_for_Tegra in your <BSP_ROOT> folder. Extract the "Sample Root Filesystem" into Linux_for_Tegra/rootfs.

```
sudo tar -C Linux_for_Tegra/rootfs/ -xjf tegra_linux_sample-root-filesystem_r39.2.0_aarch64.tbz2
```

4.2 CTI BSP Installation

1. Copy the CTI-L4T-ORIN-AGX-39.2.0-V####.tgz package into <BSP_ROOT>/Linux_for_Tegra.

If you are using Nvidia's SDK manager then "<BSP_ROOT>" will be:
~/nvidia/nvidia_sdk/<JetPack_Version>_Linux_JETSON_AGX_ORIN_TARGETS/

Otherwise if manually installing from the NVIDIA® Embedded Download Center
<BSP_ROOT> will be the folder created previously

```
cp CTI-L4T-ORIN-AGX-39.2.0-V###.tgz <BSP_ROOT>/Linux_for_Tegra
```

```
2. Extract the BSP: tar -xzf CTI-L4T-ORIN-AGX-39.2.0-V###.tgz
cd <BSP_ROOT>/Linux_for_Tegra
sudo tar -xzf CTI-L4T-ORIN-AGX-39.2.0-V###.tgz
```

```
3. Change into the CTI-L4T directory:
cd <BSP_ROOT>/Linux_for_Tegra/CTI-L4T
```

4. Run the install script (as root or sudo) to automatically install the BSP files
to the correct locations:

```
sudo ./install.sh
#return to Linux_for_Tegra
cd ..
```

5. The CTI-L4T BSP is now installed on the host system and it should now be able
to flash the AGX Orin™ module.

5. Flashing AGX Orin™ Modules

1. Connect the AGX Orin™ and Carrier to the computer via USB, following the
instructions in the appropriate manual.

2. Put the system to be flashed into recovery mode, following the
instructions in the appropriate manual

3. There are two options for flashing Jetson modules:

Using CTI's automated script:
./cti-flash.sh

Follow the menu and select your desired configuration. Once selected,
the device will start to flash.

Using the Manual Method:

Note do not add the ".conf" file extension to the <config> parameter:

Manual Flash: ./flash.sh cti/<module>/<boardname>/<config> mmcblk0p1

<module> is orin-agx or orin-agxi (orin-agx industrial)

If you are using a JCB022, select a jcb002 board config and proceed the flash command with JCB022_OVERLAY=1.

Examples:

./flash.sh cti/orin-agx/forge/base mmcblk0p1

//Flash SUPER MODE (AGX Orin 32GB Production Modules ONLY SKU: 0004)
SUPER_MODE=1 ./flash.sh cti/orin-agx/forge/base mmcblk0p1

4. Once the flashing has completed, the AGX Orin™ will reboot

6. Upgrading to a New Package Release

Upgrading L4T or CTI-BSP versions without reflashing is not currently supported.

7. Changing Profiles and Overlays on AGX Orin™

cti-orin-agx-fdt.sh is used primarily for switching carrier/camera configurations and adding/removing overlays.

It modifies the bootloader file at /boot/extlinux/extlinux.conf

cti-orin-agx-fdt.sh is a script that can be run from any directory in the terminal.
i.e:

root@tegra-ubuntu:/home/nvidia# cti-orin-agx-fdt.sh

In the main menu you will see a list of supported carriers along with an option to add/remove overlays below them. Follow the menus based off of what configuration you would like to switch to.

```
~~~~~  
                SCRIPT TO MODIFY EXTINUX CONF  
~~~~~  
This script updates extlinux.conf with selected  
Device Trees and Device Tree Overlays  
  
When you are done, exit the program and reboot  
Your device for the changes to take affect  
Select the carrier
```

```
~~~~~
1.  Forge (AGX201)
2.  Rogue for Orin (AGX202)
3.  Rogue Essential (AGX205)
4.  Uses (AGX901)
5.  Add/Remove Overlay
x.  Exit
Enter choice:
```

Ex. If you would like to switch to a ZEDX config on the Forge+AGX Orin Industrial you would make the following selections after finding them in the submenus:
Carrier menu: Forge (AGX201) > Forge Menu: jcb002 + ZEDX > \
Module-type menu: orin-agxi
After selecting all necessary parameters, you will receive a log indicating a successful update followed by a return to the main menu.

Special Case involving JCB022:

If you switch to using a JCB022 from a different adapter type and or you have not flashed with JCB022_OVERLAY=1, you will need to set the overlay under the Add/Remove Overlay menu option:
select "JCB022" > Apply

and when moving to another adapter type from JCB022 you should remove the overlay:
select "JCB022" > Remove

Note that JCB022 uses JCB002 device tree configurations in additon to the JCB022 overlay. If you require the JCB022 overlay, you will need to select a JCB002 configuration as well. Without a configuration selected, the overlay will not load. The Script will throw a warning if it detects an Overlay without a configuration selected :

Warning! An OVERLAYS variable is set in your extlinux.conf
Without an FDT variable. OVERLAYS needs the FDT (device tree)
Variable set in order to load. Please select a carrier and a
Configuration using this script, if you wish to use Overlays!
Press any key to exit...

If you receive this warning, you will exit the program after selecting any key.
Relaunch the script to set a proper configuration.

If at any point you make an invalid selection, you will return to the main menu.

When you are done using the script
Select 'x'.

Changes will take affect after reboot.
i.e:
sync
reboot

You can view your extlinux.conf file by opening it in your preferred text editor i.e.:

```
vim /boot/extlinux/extlinux.conf
```

or cat

```
cat /boot/extlinux/extlinux.conf
```

```
root@tegra-ubuntu:/home/nvidia# cat /boot/extlinux/extlinux.conf
```

```
TIMEOUT 30
```

```
DEFAULT primary
```

```
MENU TITLE L4T boot options
```

```
LABEL primary
```

```
MENU LABEL primary kernel
```

```
LINUX /boot/Image
```

```
INITRD /boot/initrd
```

```
FDT /boot/tegra234-orin-agxi-cti-AGX201-JCB002-ZEDX.dtb
```

```
OVERLAYS /boot/tegra234-orin-agxi-cti-JCB022-overlay.dtb
```

```
APPEND ${cbootargs} root=/dev/mmcblk0p1 rw rootwait rootfstype=ext4 \
```

```
mminit_loglevel=4 console=ttyTCU0,115200 console=ttyAMA0,115200 \
```

```
firmware_class.path=/etc/firmware fbcon=map:0 video=efifb:off console=tty0
```

cti-orin-agx-fdt.sh will modify the "FDT" and "OVERLAYS" variables depending on the configuration and overlays you select. Above is an example of selecting:

Carrier menu: Forge (AGX201) > Forge Menu: jcb002 + ZEDX > \

Module-type menu: orin-agxi

and

Add/Remove Overlay menu option:

select "JCB022" > Apply

8. Non-volatile Jumper blocks

Included with this BSP is a program called "ds4520". This program will allow you to set the jumper settings for the 3 onboard nonvolatile jumper blocks.

Program usage is as follows:

```
ds4520 -b [i2c bus#] -a [0xXX i2c address] 0=[0/1/f] 1=[0/1/f] ... 8=[0/1/f] #Set IOs
```

```
ds4520 -b 6 -a 0x53 0=0 1=f 2=1 #Set IO0 to low, set IO1 to float, set IO2 to HIGH
```

```
ds4520 -b 6 -a 0x53 -g #Print out current GPIO states
```

```
ds4520 -b 6 -a 0x53 -w 0 #save states to NV memory and lock
```

```
ds4520 -b 6 -a 0x53 -w 1 #unlock eeprom, allow modification
```


9. Change Log

Version ORIN-AGX-39.2.0-V001 July 8th, 2026

- Initial Release of AGX Orin™ on Jetpack 7.2 l4t 39.2.0.

Contact Connect Tech

If you have any problems, questions or suggestions regarding the Board Support Package and hardware, please feel free to contact Connect Tech Inc.

Contact Information	
Support	Please go to the Connect Tech Resource Center for product manuals, installation guides, device drivers, BSPs and technical tips. Submit your technical support questions to our support engineers. Technical Support representatives are available Monday through Friday, from 8:30 a.m. to 5:00 p.m. Eastern Standard Time.
Contact Information	support@connecttech.com sales@connecttech.com www.connecttech.com Toll Free: 800-426-8979 (North America only) Telephone: +1-519-836-1291 Facsimile: 519-836-4878 (on-line 24 hours)