

BOARD SUPPORT PACKAGE

For Connect Tech NVIDIA Jetson AGX Xavier Carriers

BSP Version: AGX-32.3.1 V008

Last Updated: 2021/04/28

Introduction

This Board Support Package adds support for Connect Tech Jetson AGX Xavier family of carrier boards to Linux4Tegra. It includes any extra files required to use all the features of the carriers. Please check the "Product Specific Details" section for what features for your board is supported with this BSP release and the "Changes" section 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/>

Requirements

- x86 based host machine running Ubuntu 18.04
- JetPack 4.3 installed (from NVIDIA Embedded Download Center)
- AGX Xavier production module
- Connect Tech AGX Xavier Carrier
- USB Cable for flashing
- L4T 32.3.1

*L4T version can be found in `/etc/nv_tegra_release` and will look like this:

```
# R32 (release), REVISION: 1.0
```

Supported Cameras in BSP

- ECON: NileCAM30: AR0330
- ECON: STURDeCAM20: AR0230
- Leopard: LI-IMX274-MIPI

Installation

1. Before Installing the BSP you will need to install Jetpack on the x86 host system using the Nvidia SDK manager.
2. After successful installation of JetPack, copy the CTI-L4T-AGX-32.3.1-V008.tgz package from "install" directory into "Linux_for_Tegra".
 - a. Ex. Typical path for "Linux_for_Tegra" directory:
`~/nvidia/nvidia_sdk/JetPack_4.2_Linux_P2888/Linux_for_Tegra/`

3. Extract the BSP:
 - a. `tar -xzf CTI-L4T-AGX-32.3.1-V008.tgz`
4. Extract rootfs to Linux_for_Tegra directory
 - a. `tar -zxvf rootfs.tgz`
5. Change into the CTI-L4T directory:
 - a. `cd ./CTI-L4T`
6. Run the install script (as root or sudo) to automatically install the BSP files to the correct locations:
 - a. `sudo ./install.sh`
 - b. `cd ..`
7. The CTI-L4T BSP is now installed on the host system and it should now be able to flash the Xavier module.
8. To flash on the AGX Xavier use the following (do not add ".conf"):
 - a. CTI Assisted Flashing: `./cti-flash.sh`
 - b. Manual Flash: `./flash.sh <boardname> mmcblk0p1`
 - c. Examples: `./flash.sh rogue_agx103 mmcblk0p1`

Note: Make sure that the *.conf file is present in the path where flash.sh resides.

Flashing Instructions

1. Connect the AGX Xavier 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. Run `./flash.sh <board> mmcblk0p1` from Linux_for_Tegra directory
4. Once the flashing has completed, the Xavier will reboot
5. To switch between different boards, you will need to repeat these steps. There is currently no run time support for switching profiles on the AGX Xavier

Product Specific Details

AGX101 (Rogue)

- CAN Support
- USB Support
- GbE Phy Support
- 2 IM
- Supports JCB002 adapter with 8 cameras (Only for Xavier)
- SUPPORTS XAVIER 8GB MODULE
- SPI support

NOTE: Due to HW Limitations There is NO CAN on ENG Samples

AGX103 (RogueX)

- CAN Support
- USB Support
- PCIe Support
- NVMe Support
- I2C-GPIO PCA9531 Support
- GPIO pin @0x60 : 4,5,6,7
- GPIO pin @0x61 : 12,13,14,15
- GbE Phy Support
- 2 IM
- Supports JCB002 adapter with 8 cameras (Only for Xavier)
- SUPPORTS XAVIER 8GB MODULE
- SPI support

NOTE: Due to HW Limitations There is NO CAN on ENG Samples

GMSL Camera Platform on AGX Xavier Dev Kit (JCB004)

- Standard Dev Kit functionality as documented by NVIDIA
- Also supports up to 8 E-CON or Leopard cameras attached with JCB004 expansion board

Changes

Version AGX-32.3.1 V008, April 28, 2021

- USB OTG and USB C support added for Rogue Rev E

Version AGX-32.3.1 V007, June 08, 2020

- Added missing dtbs(jcb004) from previous release

Version AGX-32.3.1 V006, May 29, 2020

- Fixed login loop
- Added deb packaged

Version AGX-32.3.1 V004, May 07, 2020

- Fixed issue with install.sh script

Version AGX-32.3.1 V004, Feb 24, 2020

- Added support for Leopard IMX390 cameras on JCB004 for Xavier devkit

Version AGX-32.3.1 V003, Feb 14, 2020

- Added support for E-CON AR0330 cameras on JCB004 for Xavier devkit

Version AGX-32.3.1 V002, Feb 13, 2020

- Added support for E-CON AR0330 cameras on JCB002 for Rogue and Rogue-X

Version AGX-32.3.1 V001, Feb 06, 2020

- Initial version for JetPack 4.3 (L4T 32.3.1)

- Added JCB002 adapter support to RogueX
- Fixed eth0 hotplug issue
- Prevented i2c error message from appearing in dmesg logs of modules with no camera support
- Added SPI support

Version AGX-32.2.1 V003, Dec 23, 2019

- Fixed cti-flash.sh to support flashing
- Corrected verbose in install.sh

Version AGX-32.2.1 V002, Dec 10, 2019

- Support for Xavier 8GB module for Rogue and Rogue-X carriers

Version AGX-32.2.1, Dec 05, 2019

- Initial Release for Jetpack 4.2.2 (L4T 32.2.1)

Version AGX-32.1.0, Nov 08, 2019

- Added camera support (MIPI CSI Expansion)

Version AGX-32.1.0, Nov 04, 2019

- Initial Release

Version 203, Jun 17, 2019

- Added Rogue Camera Support
- Fixed an Issue Where Some Modules Would Not Flash

Version 202, Apr 30, 2019

- Changed Kernel Name to 4.9.104-tegra

Version 201, Apr 8, 2019

- Initial Release for the Mimic and Rogue Jetpack 4.2 (L4T 32.1.0)

Version 200, Mar 15, 2019

- Initial Release for the Mimic and Rogue Jetpack 4.1 (L4T 31.1.0)

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	<p>Please go to the Connect Tech Resource Center for product manuals, installation guides, device drivers, BSPs and technical tips.</p> <p>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.</p>
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