BOARD SUPPORT PACKAGE
For Connect Tech NVIDIA Jetson TX1 Carriers

BSP Version: TX1-32.3.1 V004

Last Updated: 2020/09/02

Introduction

This Board Support Package adds support for Connect Tech Jetson TX1 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/

Consult KDB344 for TX1 hardware compatibility with your carrier:
https://connecttech.com/resource-center-category/all-kdb-entries/

Requirements

- o x86 based host machine running Ubutnu 14.04
- o JetPack 4.3 installed (from NVIDIA Embedded Download Center)
- o TX1 Production module
- o Connect Tech TX2/TX1 Carrier
- o USB Cable for flashing

*L4T version can be found in /etc/nv_tegra_release and will look like this:
R28 (release), REVISION: 2.0

Installation

1. Before Installing the BSP you will need to install JetPack 4.3 on the x86 host system.

2. Copy the CTI-L4T-TX1-32.3.1-V###.tgz package into <install_dir>/64_TX1/Linux_for_Tegra/:

3. Extract the BSP:
   tar -xzf CTI-L4T-TX1-32.3.1-V###.tgz (replacing ### with your file name)

4. Change into the CTI-L4T directory:
   cd ./CTI-L4T

5. Run the install script (as root or sudo) to automatically install the BSP files to the correct locations:
   sudo ./install.sh
   cd ..

6. The CTI-L4T BSP is now installed on the host system and it should now be able to flash the TX1.

7. To flash on the TX1 use the following (do not add ".conf"):
   CTI Assisted Flashing: ./cti-flash.sh
   Manual Flash: ./flash.sh cti/<boardname> mmcblk0p1

   Examples:
   ./flash.sh cti/astro mmcblk0p1
   ./flash.sh cti/elroy mmcblk0p1
   ./flash.sh cti/orbitty mmcblk0p1

Flashing Instructions

1. Connect the TX1 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.conf> mmcblk0p1 from Linux_for_Tegra directory

4. Once the flashing has completed, the TX1 will reboot

5. To switch between different boards, you will need to repeat these steps

6. There is currently no run time support for switching profiles on the TX1

Product Specific Details

ASG001 (Astro)

- o PWM Fan Support
- o USB Support
- o mPCIe Support

NOTE: Currently NO CSI camera support

ASG002 (Elroy)

- o PWM Fan Support
- o USB Support
- o mPCIe Support

NOTE: Currently NO CSI camera support

ASG003 (Orbitty)

- o PWM Fan Support
- o USB Support

ESG501 (Rosie)

- o mPCIe Support
- o USB Support

ESG503 (Rudi)

- o USB Support
- o CAN Support
- o mPCIe Support
- o GPIO support

ASG006 (Spacely)

- o USB Support
- o CAN Support
- o mPCIe Support
- o GPIO Support
- o SPI Support

NOTE: Currently NO IMX camera support

ASG008 (Sprocket)

- o USB Support
- o I2C Support

NOTE: Currently NO IMX camera support

ASG007 (Cogswell)

- o USB Support
- o CAN Support
- o mPCIe Support
- o GPIO Support

ASG016 (Quasar)

- o PWM Fan Support
- o USB Support
- o SD Card Support
- o GPIO Support
- o SATA Drive Support

NOTE: Currently NO IMX camera support
NOTE: MTTCAN is not available on TX1 modules

Changes

Version TX1-32.3.1-V004, Sept 02, 2020

- o Fixed login loop bug

Version TX1-32.3.1-V003, May 06, 2020

- o Fixed issue with install.sh script

Version TX1-32.3.1-V002, March 17, 2020

- o   Added Quasar profile
- o   Fixed issue with Orbitty USB lanes

Version TX1-32.3.1-V001, March 10, 2020
- o   Initial Release for JetPack 4.3/L4T 32.3.1
- o   Added SPI support to Spacely

Version TX1-32.2.1-V001, Jan 07, 2020
- o   Initial Release for JetPack 4.2.2/L4T 32.2.1
- o   New naming scheme

Version 021, Dec 17, 2018
- o   Added support for ASG939

Version 020, July 24, 2018
- o   Fixed suspend bug

Version 019, May 8,2018
- o   L4T 28.2 release
- o   Added CTI assisted flash

Version 018, March 14, 2018
- o   Fixed issue with Jetson Ethernet, added support for USB only based mPCIe cards

Version 017, Jan 04, 2018
- o   Fixed flash.sh script that would cause issues with some device trees during flash

Version 016, Nov 08, 2017
- o   Fixed issue where some Monitors would prevent the system from booting

Version 014, Oct 11, 2017
- o   L4T 28.1 release
- o   Version 015, Oct 19, 2017
- o   Added Spacely support

Version 013, Oct 3, 2017
- o   Added spacely support
- o   Added IMX185 support for sprocket

Version 012, June 6, 2017
- o   Added support for VPG003
- o   CAN speed fix

Version 011, May 5, 2017
- o   Fixed GPIO conflict on Board without CAN

Version 010, April 27, 2017

o Added support for Sprocket (ASG008)

Version 009, March 14, 2017
- o Added Rudi
- o L4T 24.2.1 release
- o New installer
- o cti-l4t-util included

Version 008, March 14, 2017
- o Added Rudi
- o L4T 24.2.0 release
- o New installer
- o cti-l4t-util included

Version 007, Nov 12, 2016
- o Engineering release only

Version 006, Oct 24, 2016
- o Moved to L4T 24.2
- o Changed e1000e to a loadable module and added igb drivers
- o Updated Camera Support for L4T 24.2

Version 005, Oct 6, 2016
- o Fixed an issue on ASG002 where both cameras would need to be installed in order to use one camera in 24.1
- o Moved to new naming scheme for Device Trees

Version 004, Sept 30, 2016
- o Added Support for USB Only mPCIe cards

Version 003, July 12, 2016
- o Added CSI camera support for ASG001 and ASG002
- o Added part number to CTI-L4T.version
- o Fixed Virtual Terminals

Version 002, June 20, 2016
- o Added a custom extlinux.conf
- o Transitioned to CTI DTB files

Version 001, June 14, 2016
- o Initial BSP release, only PWM Fan Support so far

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)