

BOARD SUPPORT PACKAGE

For Connect Tech Sentry-X Rugged Embedded System

BSP Version: SGX-32.4.4 V001

Last Updated: 2020/12/03

Introduction

This Board Support Package adds support for Connect Tech Sentry-X Rugged Embedded System to Linux4Tegra. It includes any extra files required to use all the features of the carrier. 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 4.4.1 installed (from NVIDIA Embedded Download Center)
- Connect Tech Sentry-X Rugged Embedded System
- USB Cable for flashing
- L4T 32.4.4

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

```
# R32 (release), REVISION: 2.0
```

Installation

1. Before Installing the BSP you will need to install JetPack 4.4.1 on the x86 host system using the NVIDIA SDK Manager or from the source packages on NVIDIA's website as detailed below.
2. Copy the CTI-L4T-SGX-32.4.4-V001.tgz package into
`~/nvidia/nvidia_sdk/JetPack_4.4.1_Linux_JETSON_AGX_XAVIER/Linux_for_Tegra/`
3. Extract the BSP:
`tar -xzf CTI-L4T-SGX-32.4.4-V001.tgz`
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 AGX Xavier module.
7. To flash on the AGX Xavier use the following (do not add ".conf"):
CTI Assisted Flashing: `./cti-flash.sh`
Manual Flash: `./flash.sh cti/xavier/sentry-x mmcblk0p1`

Installing JetPack from SDK Manager

Please follow installation steps from kdb374 for JetPack 4.2+ <https://connecttech.com/resource-center/kdb374/>

Installing JetPack from NVIDIA's Source Packages (Alternate Approach)

- Go to <https://developer.nvidia.com/embedded/linux-tegra-archive> and click on the green button labeled "32.4.4 >".
- Download the "L4T Driver Package (BSP)" and "Sample Root Filesystem" files for AGX Xavier. Afterwards, you should have the files "Tegra186_Linux_R32.4.4_aarch64.tbz2" and "Tegra_Linux_Sample-Root-Filesystem_R32.4.4_aarch64.tbz2".
- Create a directory named `~/nvidia/nvidia_sdk/JetPack_4.4.1_Linux_JETSON_AGX_XAVIER/` and copy the "Tegra186_Linux_R32.4.4_aarch64.tbz2" file you downloaded into that directory.
- Unzip the tarball:
`sudo tar jxf Tegra186_Linux_R32.4.4_aarch64.tbz2`
- You should now have a new directory called `Linux_for_Tegra` in your "JetPack_4.4.1_Linux_JETSON_AGX_XAVIER" folder. Change directories into that and then copy the "Tegra_Linux_Sample-Root-Filesystem_R32.4.4_aarch64.tbz2" file you downloaded into the `rootfs` folder inside.
- Change into the `rootfs` folder and unzip the tarball:
`sudo tar jxf Tegra_Linux_Sample-Root-Filesystem_R32.4.4_aarch64.tbz2`
- If you wish to flash one of NVIDIA's devkits, or move on to installing CTI's BSP. You can change directories back to `~/nvidia/nvidia_sdk/JetPack_4.4.1_Linux_JETSON_AGX_XAVIER/Linux_for_Tegra/` and run:
`sudo ./appy_binaries.sh`

Flashing Instructions

- Connect the Sentry-X to the computer via USB, following the instructions in the Sentry-X manual
- Put the system to be flashed into recovery mode, following the instructions in the Sentry-X manual
- Run `./cti-flash.sh` or `./flash.sh cti/xavier/sentry-x mmcblk0p1` from `Linux_for_Tegra` directory

- Once the flashing has completed, the Xavier will reboot

Product Specific Details

AGX102 (Sentry-X)

- CAN Support
- USB Support
- GbE Phy Support
- 2 NVMe
- 8 GPIO (4 input, 4 output)
- Multi-Serial UART Support
- Wifi Support
- Bluetooth Support
- Choice of Fischer MiniMax Series Connectors Dock or Sealed PC Style Connectors Dock

Changes

Version SGX-32.4.4 V001, Dec 03, 2020

- Initial release for Sentry-X on Jetpack 4.4.1 L4T 32.4.4

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>
Contact Information	<p>support@connecttech.com sales@connecttech.com www.connecttech.com/</p> <p>Toll Free: 800-426-8979 (North America only) Telephone: +1-519-836-1291 Facsimile: 519-836-4878 (on-line 24 hours)</p>