Jetson TK1 Datasheet

Jetson TK1 Product Description:

The NVIDIA Jetson TK1 development kit unlocks the power of the GPU for embedded applications. Built around the revolutionary Tegra K1 SOC, it uses the same Kepler computing core designed into supercomputers around the world. It is a fully functional CUDA platform that will allow you to quickly develop and deploy compute-intensive systems for computer vision, robotics, and medicine.
NVIDIA provides the BSP and software stack, including CUDA, OpenGL 4.4, and the NVIDIA VisionWorks toolkit. With a complete suite of development and profiling tools, out-of-the-box support for cameras and other peripherals, you have everything you need to realize the future of embedded.

Jetson TK1 Board Details:

Tegra K1 SOC

- NVIDIA Kepler GPU with 192 CUDA cores
- NVIDIA 4-Plus-1 quad-core ARM Cortex A15 CPU
- 2 GB x16 memory with 64 bit width
- 16 GB 4.51 eMMC memory
- 1 Half mini-PCIE slot 1
- Full size SD/MMC connector
- 1 USB 2.0 port, micro AB 1
- USB 3.0 port, A
- 1 Full-size HDMI port
- 1 RS232 serial port
- 1 ALC5639 Realtek Audio codec with Mic in and Line out
- 1 RTL8111GS Realtek GigE LAN
- 1 SATA data port
- SPI 4MByte boot flash

The following signals are available through an expansion port

- DP/LVDS
- Touch SPI 1x4 + 1x1 CSI-2
- GPIOs
- UART
- HSIC
- i2c

Board dimensions

- 127mm x 127mm x 26

Developer Kit Package Content:

- Jetson TK1 DEV Board
- AC Power supply
- Rubber feet (4)
- Quick Start guide
- USB Micro-B to USB A

- ZOTAC SKU ZT-JSTK1-10L NVIDIA Jetson TK1 development kit
- EAN code: 4895173604133
  Units per box: 10
- Minimum Order Quantity (MOQ): 10
- Shipping: FCA Hong Kong
- Price to distribution: USD 198

Operating System Description – L4T

Linux for Tegra (L4T) provides flashing utilities, bootloader, Linux kernel, Tegra hardware acceleration libraries for graphics, multimedia and compute, and a reference filesystem for evaluating Linux on the Tegra platform.
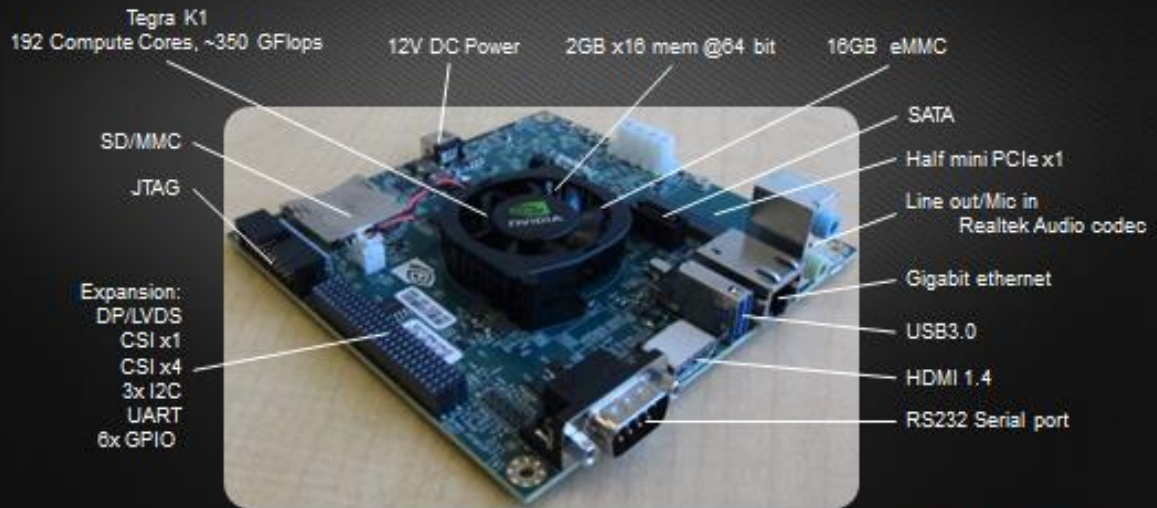Key Components:

- Bootloader, BCT and flashing utilities
- Linux Kernel Binary and Source Code
- Reference File System
- GStreamer (gst-openmax) Multimedia Hardware Acceleration Libraries
- X11, EGL, OpenGL-ES, GLX, OpenGL Hardware Acceleration Libraries
- Multimedia and Graphics Demo Applications

CUDA Developer Information

- CUDA Version: 6.0
- CUDA Cores
  - Computational Capability: sm_32
  - Number of cores: 192
- CUDA libraries:
  - cudart, cufft, cublas, curand, cusparse, npp, opencv4tegra for registered developers.
  - Visionworks: available on request
- CUDA tools:
  - for local development, all the command line tools (compiler, cuda-gdb, cuda-memcheck, command-line profiler)
  - for remote development, all the command-line tools and the visual tools too (NSight Eclipse Edition, Visual Profiler)
- CUDA documentation:
  - local, HTML and PDF
  - online, once CUDA 6.0 becomes public (April 2014)
- CUDA Installer:
  - Debian packages for registered developers
  - available publicly once CUDA 6.0 becomes public (April 2014)

Jetson TK1 Board Overview

Components and I/O

Tegra K1
192 Compute Cores, ~350 GFlops
12V DC Power
2GB x16 mem @64 bit
16GB eMMC

SD/MMC
JTAG

Expansion:
DP/LVDS
CSI x1
CSI x4
3x I2C
UART
6x GPIO

SATA
Half mini PCIe x1
Line out/Mic in
    Realtek Audio codec
Gigabit ethernet
USB3.0
HDMI 1.4
RS232 Serial port

Board dimension is 5"x5" / 127mm x 127mm (non-standard FF)

NVIDIA Confidential

Software Operating System