JETSON TX2 DEVELOPER KIT

User Guide

DA_09452-005

Version	Date	Authors	Description of Change
2.0	March 28, 2019	jsachs, plawrence	Revision for Jetson Linux Driver Package r32.1.
3.0	July 8, 2019	jsachs, plawrence	Revision for SDK Manager and Jetson Linux Driver Package r32.2.
4.0	January 7, 2020	ssheshadri	Revision for Jetson Linux Driver Package r32.3.1.

NOTE

Welcome to the NVIDIA Jetson platform! There two key things you should do right away:

1. Sign up for the NVIDIA Developer Program – this enables you to ask questions and contribute on the NVIDIA Jetson Forums, gives access to all documentation and collateral on the Jetson Download Center, and more.
2. Read this User Guide! After that, check out these important links:

- Jetson FAQ – Please read the FAQ.
- Support Resources – This web page links to important resources, including the Jetson Forum and the Jetson Ecosystem page.
- Jetson Linux Driver Package Release Notes – Jetson Linux Driver Package (L4T) is a key component of the Jetson platform, and provides the sample filesystem for your developer kit. Please read the latest release notes.

- Thanks,
  The NVIDIA Jetson team

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JETSON TX2 DEVELOPER KIT

The NVIDIA® Jetson™ TX2 Developer Kit gives you a fast, easy way to develop software and hardware for the Jetson TX2 AI supercomputer on a module. Jetson TX2 is ideal for applications requiring high computational performance in a low power envelope.

NVIDIA JetPack™ SDK supports both your developer kit and host development platform. It includes:

- Sample Linux filesystem with NVIDIA drivers
- AI and Computer Vision libraries and APIs
- Developer tools
- Documentation and sample code

Before using your developer kit, you must install JetPack. A Linux host computer is required; for details, see How to Install JetPack, below.

Minimum system requirements for the host computer are:

- Ubuntu Linux x64 v16.04 or v18.04
- A valid Internet connection
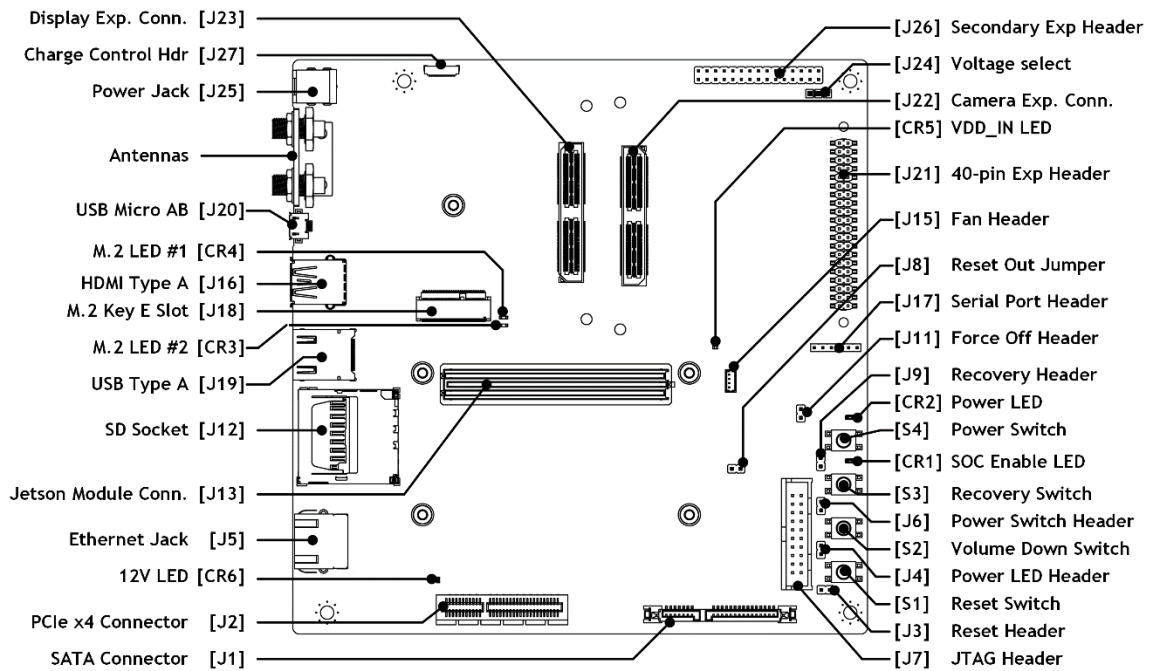- At least 23GB of disk space

INCLUDED IN THE BOX
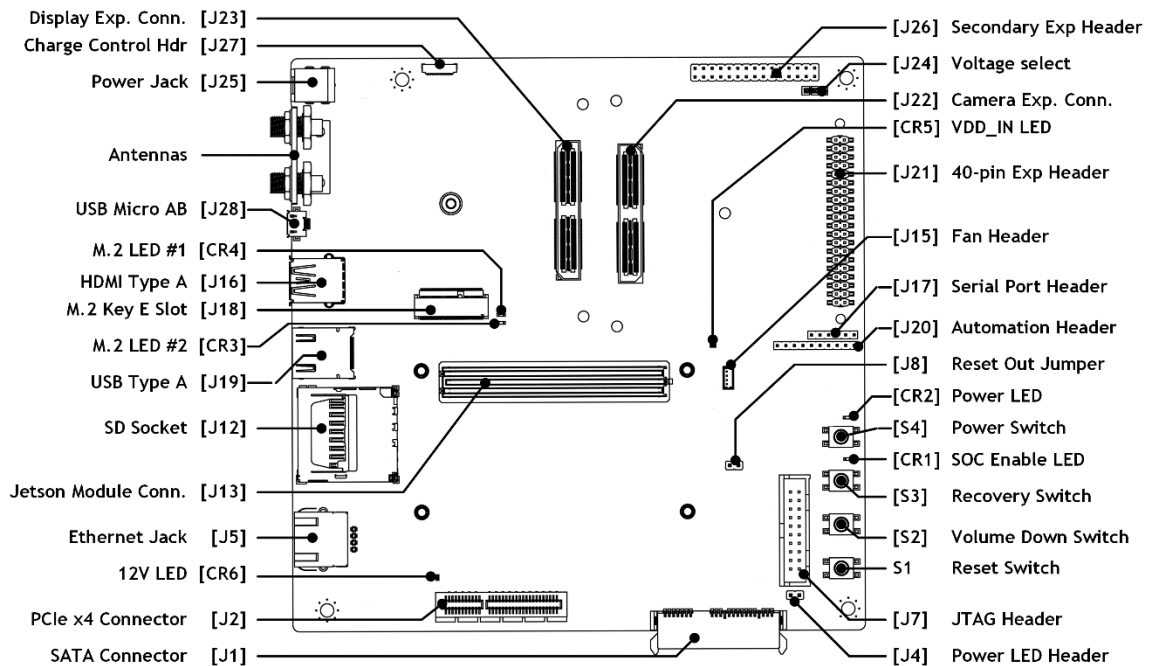
The Jetson TX2 Developer Kit includes:

- Jetson TX2 module (P3310) with thermal solution
- Reference carrier board (P2597)
- Power supply with AC cord
- USB Micro-B to USB A cable
- USB Micro-B to Female USB A cable
- (2x) WLAN/Bluetooth antenna

DEVELOPER KIT INTERFACES

Top view of developer kit carrier board (revisions B02 and B04)

Display Exp. Conn. [J23]
Charge Control Hdr [J27]
Power Jack [J25]
Antennas
USB Micro AB [J20]
M.2 LED #1 [CR4]
HDMI Type A [J16]
M.2 Key E Slot [J18]
M.2 LED #2 [CR3]
USB Type A [J19]
SD Socket [J12]
Jetson Module Conn. [J13]
Ethernet Jack [J5]
12V LED [CR6]
PCIe x4 Connector [J2]
SATA Connector [J1]

[J26] Secondary Exp Header
[J24] Voltage select
[J22] Camera Exp. Conn.
[CR5] VDD_IN LED
[J21] 40-pin Exp Header
[J15] Fan Header
[J8] Reset Out Jumper
[J17] Serial Port Header
[J11] Force Off Header
[J9] Recovery Header
[CR2] Power LED
[S4] Power Switch
[CR1] SOC Enable LED
[S3] Recovery Switch
[J6] Power Switch Header
[S2] Volume Down Switch
[J4] Power LED Header
[S1] Reset Switch
[J3] Reset Header
[J7] JTAG Header

Top view of developer kit carrier board (revision C02)

Display Exp. Conn. [J23]
Charge Control Hdr [J27]
Power Jack [J25]
Antennas
USB Micro AB [J28]
M.2 LED #1 [CR4]
HDMI Type A [J16]
M.2 Key E Slot [J18]
M.2 LED #2 [CR3]
USB Type A [J19]
SD Socket [J12]
Jetson Module Conn. [J13]
Ethernet Jack [J5]
12V LED [CR6]
PCIe x4 Connector [J2]
SATA Connector [J1]

[J26] Secondary Exp Header
[J24] Voltage select
[J22] Camera Exp. Conn.
[CR5] VDD_IN LED
[J21] 40-pin Exp Header
[J15] Fan Header
[J17] Serial Port Header
[J20] Automation Header
[J8] Reset Out Jumper
[CR2] Power LED
[S4] Power Switch
[CR1] SOC Enable LED
[S3] Recovery Switch
[S2] Volume Down Switch
S1 Reset Switch
[J7] JTAG Header
[J4] Power LED Header

Note about carrier board revisions

The B02 and B04 revision carrier boards are extremely similar. B04 added the CR5 and CR6 LEDs and some minor circuit changes. The C02 revision included changes in support of Jetson TX2i and Jetson TX2 4GB modules, consolidation of button header pins into a single pin header, and changing the SATA connector to a right angle type to avoid possible conflict with a PCIe card.

See the *Jetson TX2 Developer Kit Carrier Board Specification* for comprehensive information.

Interface Details

This list highlights some of the Jetson TX2 Developer Kit carrier board interfaces.

- [CR1] Green LED indicates when SoC is enabled.
- [CR2] Green LED indicates when carrier board is powered.
- [CR3] Green LED indicates when [J18] M.2 Key E connector pin 6 is active.
- [CR4] Green LED indicates when [J18] M.2 Key E connector pin 16 is active.
- [CR5] Red LED indicates when main power supply is connected and active.
- [CR6] Red LED Indicates when the 12V supply for PCIe/SATA is active.

- [J1] SATA connector includes both data and power.
- [J2] PCIe x4 connector routes to a x4 PCIe 2.0 controller.
- [J4] The Power LED header can connect to a remote power LED.
- [J5] 10/100/1000 BASE-T Ethernet.
- [J12] Full-size SD Card interface supports up to SDR104 card mode (UHS-1).
- [J13] 400-pin (8 x 50) connector for the Jetson module. The Jetson TX2 Developer Kit carrier board supports these Jetson modules: Jetson TX2, Jetson TX2i, Jetson TX2 4GB, and Jetson TX1. See the NVIDIA Jetson Linux Driver Package Developer Guide for details about software support for those modules.
- [J15] 4-pin fan header for 5V PWM fan. The Jetson TX2 module included with the developer kit already has thermal solution attached including Delta Electronics AFB0405MA-AFGE)
- [J16] HDMI 2.0.
- [J18] M.2 Key E connector can be used for wireless networking cards, and includes interfaces for PCIe (x1), USB 2.0, UART, I2S & I2C.
- [J19] USB 3.0 Type A.
- [J20 *B02/B04* or J28 *C02*] USB 2.0 Micro-AB connector.

  This connector can be used to flash the developer kit, and provides access to USB Device Mode features when the developer kit is running.

- [J21] 40-pin expansion header includes:
  - Power pins.

Two 3.3V power pins and two 5V power pins. These are not switchable; power is always available when the developer kit is connected to power.

o   Interface signal pins.

By default, all interface signal pins are 3.3V, but some can be configured for 1.8V. See [J24] information below.

Jetson Linux Driver Package (L4T) provides a Python library, `Jetson.GPIO`, for controlling GPIOs. The library has the same API as `RPi.GPIO`. See `/opt/nvidia/jetson-gpio/doc/README.txt` on your Jetson system for details.

By default, all interface signal pins are configured as GPIOs, except pins 3 and 5 and pins 27 and 28, which are I2C SDA and SCL, and pins 8 and 10, which are UART TX and RX.

Optional	Default	Signal voltage	Pin		Signal voltage	Default	Optional
	3.3V Supply		1	2	5.0V Supply		
	I2C1 SDA	3.3V	3	4	5.0V Supply		
	I2C1 SCL	3.3V	5	6	Ground		
Audio I2S MCLK	GPIO	3.3V or 1.8V	7	8	3.3V	UART TXD	GPIO
	Ground		9	10	3.3V	UART RXD	GPIO
UART RTS	GPIO	3.3V	11	12	3.3V or 1.8V	GPIO	Audio I2S CLK
	GPIO	3.3V or 1.8V	13	14	Ground		
	GPIO	3.3V	15	16	3.3V or 1.8V	GPIO	Digital Mic Input
	3.3V Supply		17	18	3.3V or 1.8V	GPIO	
SPI1 MOSI	GPIO	3.3V or 1.8V	19	20	Ground		
SPI1 MISO	GPIO	3.3V or 1.8V	21	22	3.3V	GPIO	
SPI1 SCLK	GPIO	3.3V or 1.8V	23	24	3.3V or 1.8V	GPIO	SPI1 CS0
	Ground		25	26	Not Used		
	I2C0 SDA	3.3V	27	28	3.3V	I2C0 SCL	
	GPIO	3.3V or 1.8V	29	30	Ground		
	GPIO	3.3V	31	32	3.3V or 1.8V	GPIO	Digital Mic Clock

Optional	Default	Signal voltage	Pin		Signal voltage	Default	Optional
	GPIO	3.3V or 1.8V	33	34	Ground		
Audio I2S LRCK	GPIO	3.3V or 1.8V	35	36	3.3V	GPIO	UART CTS
	GPIO	3.3V	37	38	3.3V or 1.8V	GPIO	Audio I2S DIN
	Ground		39	40	3.3V or 1.8V	GPIO	Audio I2S DOUT

- [J22] The camera connector supports up to six directly connected cameras via CSI-2, or up to 12 cameras via the virtual channel feature of CSI-2. The connector also includes some interface options for audio (I2S & DMIC).
- [J24] The voltage select header enables either 3.3V or 1.8V for these [J21] 40-pin expansion header pins:

  Pins 7, 12, 13, 16, 18, 19, 21, 23, 24, 29, 32, 33, 35, 38, and 40

  The 3.3V level is selected when a jumper is on [J24] pins 1-2. The 1.8V level is selected when a jumper is on [J24] pins 2-3.
- [J25] Use the included developer kit power supply with this DC power jack.
- [J26] 30-pin expansion header includes:
  - Power pins.

    One 1.8V power pin, one 3.3V power pin, and one 5V power pin. These are not switchable; power is always available when the developer kit is connected to power.

  - Interface signal pins.

Optional	Default	Signal voltage	Pin		Signal voltage	Default	Optional
	GPIO	3.3V	1	2	3.3V Supply		
	Not Used			3	4	1.8V Supply	
	CAN0 RX	3.3V	5	6	-	GPIO	
	CAN0 TX	3.3V	7	8	5.0V Supply		
	GPIO	3.3V	9	10		Ground	
	Ground		11	12	1.8V	I2C2 CLK	GPIO
	GPIO	3.3V	13	14	1.8V	I2C2 SDA	GPIO
	CAN1 RX	3.3V	15	16		WDT RESET OUT	GPIO
	CAN1 TX	3.3V	17	18	1.8V	I2C3 CLK	

Optional	Default	Signal voltage	Pin		Signal voltage	Default	Optional
	GPIO	3.3V	19	20	1.8V	I2C3 DAT	
	Ground		21	22	**1.8V**	GPIO	
	I2S1 CLK	1.8V	23	24	1.8V	I2S1 SDOUT	
	I2S1 SDIN	1.8V	25	26	1.8V	I2S1 LRCLK	
SPDIF OUT or GPIO	DSPK OUT CLK	1.8V	27	28	Ground		
SPDIF IN or GPIO	DSPK OUT DAT	1.8V	29	30	Not Used		

JETPACK

NVIDIA JetPack SDK is the most comprehensive solution for building AI applications. It includes the latest OS images for Jetson products, along with libraries and APIs, samples, developer tools, and documentation.

SUMMARY OF JETPACK COMPONENTS

This section briefly describes each component of JetPack. For additional details about these components, see the online documentation for JetPack at:

https://docs.nvidia.com/jetson/jetpack/index.html

OS Image

JetPack includes a sample file system derived from Ubuntu.

Libraries and APIs

JetPack libraries and APIs include:

- TensorRT and cuDNN for high-performance deep learning applications
- CUDA for GPU accelerated applications across multiple domains
- NVIDIA Container Runtime for containerized GPU accelerated applications
- Multimedia API package for camera applications and sensor driver development
- VisionWorks, OpenCV, and VPI (Developer Preview) for visual computing applications
- Sample applications

Sample Applications

JetPack includes several samples which demonstrate the use of JetPack components. The examples are stored in the reference filesystem and can be compiled on the developer kit.

JetPack component	Sample locations on reference filesystem
TensorRT	/usr/src/tensorrt/samples/
cuDNN	/usr/src/cudnn_samples_<version>/
CUDA	/usr/local/cuda-<version>/samples/
Multimedia API	/usr/src/tegra_multimedia_api/
VisionWorks	/usr/share/visionworks/sources/samples/ /usr/share/visionworks-tracking/sources/samples/ /usr/share/visionworks-sfm/sources/samples/
OpenCV	/usr/share/OpenCV/samples/
VPI	/opt/nvidia/vpi/vpi-0.0/samples

Developer Tools

JetPack includes the following developer tools. Some are used directly on a Jetson system, and others run on a Linux host computer connected to a Jetson system.

- Tools for application development and debugging:
    - Nsight Eclipse Edition for development of GPU accelerated applications: Runs on the Linux host computer. Supports all Jetson products.
    - CUDA-GDB for application debugging: Runs on the Jetson system or the Linux host computer. Supports all Jetson products.
    - CUDA-MEMCHECK for debugging application memory errors: Runs on the Jetson system. Supports all Jetson products.
- Tools for application profiling and optimization:
    - Nsight Systems for application profiling across GPU and CPU: Runs on the Linux host computer. Supports all Jetson products.
    - nvprof for application profiling across GPU and CPU: Runs on the Jetson system. Supports all Jetson products.
    - Visual Profiler for application profiling across GPU and CPU: Runs on the Linux host computer. Supports all Jetson products.
    - Nsight Graphics for graphics application debugging and profiling: Runs on the Linux host computer. Supports all Jetson products.

Documentation

Documents that are relevant to developers using JetPack include:

- JetPack Documentation
- VisionWorks Documentation

- NVIDIA Jetson Linux Driver Package Developer Guide
- NVIDIA Jetson Linux Driver Package Release Notes
- TensorRT Documentation
- cuDNN Documentation
- CUDA Toolkit
- NVIDIA Container Runtime
- Multimedia API Reference
- OpenCV Documentation
- Nsight Eclipse Edition Documentation
- CUDA-GDB Documentation
- CUDA-MEMCHECK Documentation
- Nsight Systems
- nvprof
- Visual Profiler
- Nsight Graphics
- VPI–Vision Programming Interface

HOW TO INSTALL JETPACK

Installing JetPack to your developer kit requires you to perform these steps, detailed in the sections below:

1. Download and install NVIDIA SDK Manager on the Linux host computer.
2. Connect your developer kit to the Linux host computer.
3. Put your developer kit into Force Recovery Mode.
4. Use SDK Manager to select and install desired components.

Download SDK Manager on the Linux Host Computer

You must have a Linux host computer to run SDK Manager and flash the developer kit. Supported host operating systems are:

- Ubuntu Linux x64 Version 18.04 or 16.04

Follow these instructions to download and install NVIDIA SDK Manager.

Note:	SDK Manager can flash and install software on a target Jetson device, but it cannot run directly on that device. Whether or not a Jetson device is present, you can use SDK Manager to update software on the Linux host.

Connect Developer Kit to the Linux Host Computer

Prepare your Jetson TX2 Developer Kit for initial setup as follows. For "headless" setup, skip the first two steps.

- Connect an external HDMI display to the carrier board's HDMI port.
- Connect a USB keyboard and mouse to a USB hub (not included) and connect the hub to the developer kit's USB Type-A port. (The USB Micro AB port will be needed for flashing.)

- Insert the Micro-B end of the included USB Micro-B to USB A cable to the carrier board's USB Micro-AB port. Connect the other end to your Linux host computer.
- Connect the included AC adapter to the carrier board's power jack. Plug the AC adapter into an appropriately rated electrical outlet.

  Use only the supplied AC adapter, as it is appropriately rated for your device.

Put Developer Kit into Force Recovery Mode

The developer kit must be in Force Recovery mode (RCM) to enable the installer to transfer system software to the Jetson module.

1. Connect the developer kit as described above. It must be powered off.
2. Press and hold down the Force Recovery button.
3. Press and hold down the Power button.
4. Release the Power button, then release the Force Recovery button.

Run SDK Manager

NVIDIA SDK Manager enables installation of software to the Jetson module and/or your Linux host computer.

For full instructions, see the SDK Manager documentation.

Note:	After the Jetson is flashed with the OS, it reboots and prompts you for initial configuration information like keyboard layout, username and password, etc.
	If no display is attached to the developer kit during this first boot, the initial configuration will be "headless." That is, you must communicate with the developer kit through a serial application on the Linux host computer (e.g., puTTY) connected via a host serial port to the correct local serial device.

WORKING WITH JETSON LINUX DRIVER PACKAGE

NVIDIA® Jetson™ Linux Driver Package (L4T, the operating system component of JetPack) provides the Linux kernel, Bootloader, NVIDIA® Jetson™ Board Support Package (BSP), and sample filesystem for Jetson developer kits. SDK Manager can install L4T along with all the other JetPack components to get your developer kit up and running quickly.

L4T is also available for download directly from the main Jetson Linux Driver Package page on the Jetson Developer Site. See the "Quick Start Guide" section of the NVIDIA Jetson Linux Driver Package Developer Guide for flashing instructions.

The "Platform Adaptation and Bring-Up" topic in the *Developer Guide* describes how to port Jetson BSP and Bootloader from your developer kit to a new hardware platform incorporating the Jetson module. Porting L4T to a new device enables use of the other JetPack components on that device, along with the software you've created using the developer kit.

COMPLIANCE

The NVIDIA Jetson TX2 Developer Kit is compliant with the regulations listed in this section. Compliance marks, including the FCC and IC ID numbers, can be found at:

https://developer.nvidia.com/embedded/support

United States

Federal Communications Commission (FCC)

FCC ID: VOB-P3310

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including any interference that may cause undesired operation of the device.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Warning: The FCC requires that you be notified that any changes or modifications to this device not expressly approved by the manufacturer could void the user's authority to operate the equipment.

RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Only those antennas with same type and lesser/equal gain filed under this FCC ID number can be used with this device.

Underwriters Laboratories (UL)

UL Listed Product Logo for Jetson TX2 Developer Kit, model name P2597.

I.T.E E204896

UL Recognized Component Logo for Embedded System Module, model name P3310.

Canada

Industry Canada (IC)

IC: 7361A-P3310

CAN ICES-3(B)/NMB-3(B)

This device complies with *Industry Canada's licence-exempt RSSs* of the Industry Canada Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

Ce dispositif est conforme à la norme RSS-247 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

RF Radiation Exposure Statement:

Jetson Dev Kit has been tested and complies with IC RSS 102 RF radiation exposure limits set forth for an uncontrolled environment when used with the NVIDIA accessories supplied or designated for this product. To satisfy IC exposure requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and persons during device operation. The use of any other accessories may not ensure compliance with IC RSS 102RF exposure guidelines.

Déclaration d'exposition aux radiations:

La Jetson Dev Kit a ete testee conformemment aux normes d'exposition d'emission RF de la IC RSS 102 pour un environement non controle lors d'utilisation avec les accessoires fournis ou recommendes par NVIDIA. Pour satisfaire aux exigences d'exposition IC, une distance de séparation d'au moins 20 cm doit être maintenue entre l'antenne de cet appareil et des personnes pendant le fonctionnement de l'appareil. L'utilisation d'accessoires autres que ceux recommendes par NVIDIA ne guarantis pas la compatibilite avec les normes d'emission RF de la IC RSS 102.

European Union

European Conformity; Conformité Européenne (CE)

This device bears the CE mark in accordance with Directive 2014/53/EU.

This device complies with the following directives:

- Radio Equipment Directive 2014/53/EU
- RoHS Directive 2011.65.EU

The full text of the EU declaration of conformity is available at:

https://developer.nvidia.com/embedded/support

A copy may also be obtained directly from NVIDIA GmbH (Floessergasse 2, 81369 Munich, Germany).

This device operates in the following frequency bands and maximum transmitted power:

Frequency Band	EIRP (dBm)	EIRP (mW)
2402 - 2480 MHz (Bluetooth)	11.54	14
2412 - 2472 MHz	20	100
5180 - 5320 MHz	23	200
5500 - 5700 MHz	23	200
5745 - 5825 MHz	14	25

Warning

- Operation in 5150 - 5350 MHz frequency band is restricted to indoor use.
- This equipment must be installed and operated with a minimum distance of 20 cm between the radiator and your body.
- Use antennas with the same Type and Gain for this device.
- Any modifications to this device, not expressly approved by the manufacturer, voids the user authority to operate the equipment.

Hardware Version: 945-82771-0005-000

Firmware Version: 7.35.221.11 (WLAN); 030A0525 (Bluetooth)

Australia and New Zealand

Australian Communications and Media Authority (RCM)

This product meets the applicable EMC requirements for Class B, I.T.E equipment and applicable radio equipment requirements.

Japan

Voluntary Control Council for Interference (VCCI)

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

VCCI－B

Radio/ Telecommunications Certification

R 007-AF0022

W52/ W53は 屋内使用限定

South Korea

Radio Research Agency (RRA)

Korean Agency for Technology and Standards (KATS)

MSIP-CRM-NVA-P3310

MSIP-RMM-NVA-P2597

B급 기기	이 기기는 가정용(B급) 전자파적합기기로서 주
(가정용 방송 통신기자재)	로 가정에서 사용하는 것을 목적으로 하며, 모
	든 지역에서 사용할 수 있습니다.

Taiwan

National Communications Commission

國家通訊傳播委員會

CCAJ17LP1260T1

注意！

依據 低功率電波輻射性電機管理辦法

第十二條

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。

低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

模組認證合格標籤 (ID)：

" CCAJ17LP1260T1 "

如果使用本模組之平台，無法在外部看見審驗合格標籤時，應在該

平台的外部明顯標示

"內含射頻模組 CCAJ17LP1260T1.

應避免影響附近雷達系統之操作。

高增益指向性天線只得應用於固定式點對點系統。

電磁波曝露量MPE標準值1mW/cm²，送測產品實測值為：.109 mW/cm².

China

State Radio Regulations Committee

CMIIT ID: 2015AJ7078

本设备包含型号核准代码为CMIIT ID: XXXXYYZZZ 的无线电发射模块

Singapore

Info-Communications Development Authority of Singapore

Complies with
IDA Standards
DA00006A
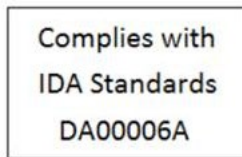
Environmental Disclosures

California Prop 65 Warning – California law requires this warning to be provided to California customers.

Prop 65 Warning: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

China/Taiwan RoHS Material Content Declaration

限用物質含有情況標示聲明書					
Declaration of the presence condition of the Restricted Sustances Marking					
設備名稱：Jetson TX2 Developer Kit					
Equipment Name: Jetson TX2 Developer Kit					

單元 Parts	限用物質及其化學符號 Restricted substances and its chemical symbols					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六價铬 (Cr(VI))	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
印刷電路部件 PCA	-	O	O	O	O	O
處理器 Processor	O	O	O	O	O	O
存儲設備 System memory	-	O	O	O	O	O
電源設備 Power adapter	-	O	O	O	O	O
攝像頭 Camera module	-	O	O	O	O	O
天線 Antenna	-	O	O	O	O	O
機械部件 Mechanicals	-	O	O	O	O	O
線材/連接器 Cables/Connectors	-	O	O	O	O	O
焊接金屬 Soldering material	O	O	O	O	O	O
助焊劑，錫膏，標籤及耗材 Flux, Solder Paste, label and other consumable materials	O	O	O	O	O	O
備考1：O：系指該限用物質未超出百分比含量基準值 Note 1： O：indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence. 備考2：-：系指該项限用物質為排外項目。 Note 2：-：indicates that the restricted substance corresponds to the exemption. 此表中所有名稱中含 "-" 的部件均符合歐盟 RoHS 立法。 All parts named in this table with an "-" are in compliance with the European Union's RoHS Legislation.						

注：環保使用期限的參考標識取決與產品正常工作的溫度和濕度等條件

Note: The referenced Environmental Protection Use Period Marking was determined according to normal operating use conditions of the product such as temperature and humidity.

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