

## **Baumer GAPI SDK for NVIDIA® Jetson TX2 with Linux® Ubuntu® 16.04** **AN201711/0.2/2018-03-09**

### **Description**

This document explains how to install the ARM®-based single-board computer Jetson TX2 for the usage of Baumer Industrial Cameras.

### **Products**

NVIDIA® Jetson TX2  
Baumer GAPI SDK – Linux® Ubuntu®  
Baumer GigE Industrial Cameras

### **Preparation**

Before the Baumer GAPI SDK can be installed on Jetson TX2 the operating system (OS) “Linux® for Tegra® R24.2.1” must be installed. For further information see chapter 2 – Getting started.

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## 1 Technical Background

The Jetson TX2 is a single-board computer with an ARM<sup>®</sup>-based central processing unit (CPU). It's a quad-core CPU-based on the ARM<sup>®</sup>-Cortex<sup>®</sup>-A57 64bit architecture. It further integrates a graphics processing unit (GPU) based on the NVIDIA<sup>®</sup> Kepler architecture. The Jetson TX2 supports Gigabit Ethernet with Jumbo Frames. Data rates up to 1 Gbit/s are specified by NVIDIA<sup>®</sup>.

## 2 Getting Started

### 2.1 Installing a new OS on Jetson TX2

Installing a new OS on Jetson TX2 requires a host PC with Linux<sup>®</sup> OS (we recommend using Ubuntu<sup>®</sup> 16.04). It is necessary to install the OS version Linux<sup>®</sup> for Tegra<sup>®</sup> R27.1 on the Jetson TX2 to get the Baumer GAPI SDK working.

First download the *Driver Package* and the *Sample File System* from the following link:

<https://developer.nvidia.com/embedded/linux-tegra-archive>

Then, follow the guide on the NVIDIA<sup>®</sup> website to install the new OS:

<https://developer.nvidia.com/embedded/jetpack>

**Note:** Please refer to the Installation Guide for Linux on how to connect a camera, acquire images and build an application.

### 2.2 Installing Baumer GAPI SDK

To install the Baumer GAPI SDK download the Jetson TX2 software package from the Baumer website ([www.baumer.com](http://www.baumer.com)). You can download the software package directly to the Jetson TX2 by connecting it to the internet. Then install the software by using the Linux<sup>®</sup> terminal. Change to the directory where the downloaded file is stored (e.g. /home/user/Downloads).

The file is called "baumer-gapi-sdk-linux-vxxxxx-Ubuntu-16.04-jetson-tx2.deb".<sup>1</sup>

Start the installation by executing the following command:

```
# sudo dpkg -i baumer-gapi-sdk-linux-vxxxxx-Ubuntu-16.04-jetson-tx2.deb1
```

### 2.3 GigE Performance

#### 3.3.1. Onboard GigE Ethernet Adapter

Since the Onboard GigE Ethernet Adapter is realized via USB3 hub it offers a lower performance level. If this adapter is used, it is recommended to use a larger packet delay in order to avoid corrupted frames.

#### 3.3.2. Ethernet Adapter via PCIe

For best Ethernet performance it is recommended to use the PCIe bus of the TX2 board. Here a lower packet delay can be used for avoiding corrupted frames.

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<sup>1</sup> xxxxx is a version number

### 3 Support

In the case of any questions or for troubleshooting please contact our support team.

#### Worldwide

Baumer Optronic GmbH  
Badstrasse 30 · DE-01454 Radeberg  
Germany

Phone +49 3528 4386 0  
[support.cameras@baumer.com](mailto:support.cameras@baumer.com)

### 4 Legal Notes

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**Baumer Optronic GmbH**

Badstrasse 30 · DE-01454 Radeberg  
Phone +49 3528 4386 0 · Fax +49 3528 4386 86  
[sales@baumeroptronic.com](mailto:sales@baumeroptronic.com) · [www.baumer.com](http://www.baumer.com)



## Document History

Date	Version	Name	Pages/ Chapter	Change
2017-01-06	0.1	ddi	all	creation of document
2018-03-09	0.2	sba	überall	Kapitel 2.3, 2.4, 3.1, 3.2 in Installation Guide Linux verschoben, Hinweis auf Installation Guide am Ende von Kapitel 2.1 eingefügt , Mitarbeiter = 2600