Software
Baumer GAPI SDK v2.9.2
Software Development Kit
Article number: 11117626 (Windows®) / 11117625 (Linux®) / 11161949 (ARM®)

Overview
- Easy integration of Baumer cameras into your application specific software environment
- Low CPU load thanks to efficient drivers for GigE Vision® and USB Vision™ standards
- Numerous sample programs and documentations
- Intuitive test- and visualizing tool: The Camera Explorer, providing the first image after just one click.
- Easy camera integration and cross-series exchange of cameras thanks to GenICam™ conformity
- Selectable color calculation algorithms for edge excellent quality or rapid transformation

Baumer GAPI SDK v2.9.2 Windows® (11117626)

Interface
- GigE, Dual GigE, 10 GigE, USB 3.0

Operating System
- Windows® 7 / 8 / 10 (32 bit and 64 bit)

Compiler
- Microsoft® Compiler (included in Microsoft Visual Studio)

Programming Languages
- C++ (Version 11) / .NET (C#, VB.NET etc.)

Supported Standards
- GenTL (v1.3, v1.5)
- SFNC (v1.5.1, v2.0, v2.1, v2.2, v2.3)
- GenICam™ v2.0
- GigE Vision® (v1.2, v2.0)
- USB3 Vision® v1.0.1
- PFNC 1.1

Supported Cameras
- MXG/ MXU/ VLG / VLG.I / VLU/ PXU
- TXG/ EXG/ LXG/ HXG/ SXG/ VEXG/ VEXU
- VCXG/ VCXU/ VQXT
- All cameras with GigE Vision® v1.2 and v2.0 standard

Baumer GAPI SDK v2.9.2 Linux® (11117628)

Interface
- GigE, Dual GigE, 10 GigE, USB 3.0

Operating System
- Linux® (32 bit und 64 bit)
- Ubuntu® Version 16.04 / 18.04
- Debian® Version 8.11 / 9.5
- Fedora® Version 26 / 27
- openSUSE® Version 15 / 42.3 (only 64 bit)

Compiler
- GCC, standard version of delivered distribution

Programming Languages
- C++ (version 11)

Supported Standards
- GenTL (v1.3, v1.5)
- SFNC (v1.5.1, v2.0, v2.1, v2.2, v2.3)
- GenICam™ v2.0
- GigE Vision® (v1.2, v2.0)
- USB3 Vision® v1.0.1

Supported Cameras
- All cameras with GigE Vision® v1.2 and v2.0 standard, USB3 Vision® cameras

Baumer GAPI SDK v2.9.2 ARM® platform (11161949)

ODROID-XU4 with Linux® Ubuntu® 18.04 (32bit)

Interface
- GigE, USB 3.0

Compiler
- GCC, standard version of delivered distribution

Programming Languages
- C++

Supported Cameras
- All cameras with GigE Vision® v1.2 and v2.0 standard, USB3 Vision® cameras

NVIDIA® Jetson TK1 with Linux® Ubuntu® 14.04 (32 bit)

Interface
- GigE, USB 3.0

Compiler
- GCC, standard version of delivered distribution

Programming Languages
- C++

Supported Cameras
- All cameras with GigE Vision® v1.2 and v2.0 standard, USB3 Vision® cameras

NVIDIA® Jetson TX1 with Linux® Ubuntu® 16.04 (64bit)

Interface
- GigE, USB 3.0

Compiler
- GCC, standard version of delivered distribution

Programming Languages
- C++

Supported Cameras
- All cameras with GigE Vision® v1.2 and v2.0 standard, USB3 Vision® cameras

NVIDIA® Jetson TX2 with Linux® Ubuntu® 16.04 (64bit)

Interface
- GigE, USB 3.0

Compiler
- GCC, standard version of delivered distribution

Programming Languages
- C++

Supported Cameras
- All cameras with GigE Vision® v1.2 and v2.0 standard, USB3 Vision® cameras

Raspberry Pi® 3 with Raspbian OS (32 bit)

Interface
- 100 MBit Ethernet, USB 2.0

Compiler
- GCC, standard version of delivered distribution

Programming Languages
- C++

Supported Cameras
- All cameras with GigE Vision® v1.2 and v2.0 standard, USB3 Vision® cameras with Legacy Mode (USB2.0)

Baumer GAPI SDK v2.9.2 ARM® (11161949)
### Recommended Requirement x86 platforms

<table>
<thead>
<tr>
<th>System Type</th>
<th>CPU Model</th>
<th>Core Model</th>
<th>Frequency</th>
<th>Cores</th>
<th>RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-camera system</td>
<td>CPU Intel® Core™ i5-2520M</td>
<td></td>
<td>2.50GHz</td>
<td>2</td>
<td>4 GB</td>
</tr>
<tr>
<td>Multi-camera system</td>
<td>CPU Intel® Core™ i7-3770</td>
<td></td>
<td>3.40GHz</td>
<td>8</td>
<td>8 GB</td>
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<tr>
<td>10GigE camera system</td>
<td>CPU Intel® Core™ i7-7820X</td>
<td></td>
<td>3.60GHz</td>
<td>8</td>
<td>32 GB</td>
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</table>

### Driver

<table>
<thead>
<tr>
<th>Driver Type</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baumer filter driver</td>
<td>GigE/ Dual GigE, for Windows® only</td>
</tr>
<tr>
<td>Baumer USB driver</td>
<td>USB 3.0 (Windows®)</td>
</tr>
<tr>
<td></td>
<td>Libusb (Linux®)</td>
</tr>
</tbody>
</table>

### Overview Baumer GAPI Function

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common</td>
<td>Camera parameter / feature control</td>
</tr>
<tr>
<td></td>
<td>Image capture</td>
</tr>
<tr>
<td></td>
<td>Image pixel transformation via Baumer Processor (Bilinear3x3, Baumer5x5, NearestNeighbor)</td>
</tr>
<tr>
<td></td>
<td>Event Handling (image callback)</td>
</tr>
<tr>
<td></td>
<td>Device &amp; PnP Events</td>
</tr>
<tr>
<td>GigE interface specific</td>
<td>Resend algorithm</td>
</tr>
<tr>
<td></td>
<td>Multiple IP addresses on one NIC</td>
</tr>
<tr>
<td></td>
<td>Action CMD</td>
</tr>
<tr>
<td></td>
<td>IP Configuration</td>
</tr>
<tr>
<td></td>
<td>Force IP</td>
</tr>
<tr>
<td>USB3.0 interface specific</td>
<td>Connection of the camera is possible via USB PortID</td>
</tr>
</tbody>
</table>

### Tools

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Camera Explorer</td>
<td>Visualisation and Evaluation Tool</td>
</tr>
<tr>
<td>IP configuration tool</td>
<td>Configuration of camera Network-IP, for Windows® only</td>
</tr>
<tr>
<td>GigE</td>
<td>Configuration of camera Network-IP, for Windows® only</td>
</tr>
<tr>
<td>Project generation tool</td>
<td>Easy producing of project files for SDK examples</td>
</tr>
</tbody>
</table>

### Overview Baumer GAPI Layer

![Baumer GAPI Layer Diagram](image)
**Tool: Camera Explorer for Evaluation and Visualisation**

| description | Visualisation and Test Tool  
Featuring all features supported by the camera in use. |
|-------------|--------------------------------------------------|
| specials    | Quick Start mode  
Auto exposure  
Image flipping  
Recording images and image series  
Recording of videos  
Show crosshairs  
Save feature settings  
View image statistics  
Image event information  
Selectable color calculation algorithms  
Histogram display in live view |