



GigE Vision Compliant Software Connectivity for Imaging Solutions

Overview

eBUS Edge is a software platform that converts cameras, imaging solutions and embedded and IoT devices to a fully compliant GigE Vision, GenICam device without requiring any additional hardware. The software transmitter enables seamless standards-based integration between devices and machine vision and edge processing.

By adding eBUS Edge to a CPU's software stack, devices support image transmission and can respond to control requests from a host PC. Designers can upgrade to GigE Vision connectivity for any device, retain existing vision inspection processes and infrastructure, while using any standards-compliant third-party image processing solutions. Integrated GigE Vision and GenICam support lets users to continue to control devices over Ethernet. Device and system designers can also write code once and then deploy it on different operating systems or hardware platforms with a portable C++ or Python API, and built-in buffer management compatible with all sensor types. The future-proof solution allows developers to prepare for IIoT and Industry 4.0 applications.

The software platform includes tiered feature-based license options to help designers meet performance demands for high-value imaging and sensor platforms requiring multi-stream or single-stream, multi-part 3D/2D/1D data streaming and single-stream 2D/1D transmission for price-sensitive cameras, embedded platforms, and IoT devices. eBUS Edge supports the GigE Vision standard, contact Pleora if USB3 Vision image transmission is required.

Multi-Source Data Streaming

eBUS Edge supports standardized multi-source data streaming to transmit multiple sources/stream channels simultaneously. In the example of 3D, this could be:

- One stream channel for 3D data transmission via multi-part;
- One stream channel for original 2D image from the left camera via image payload with extended chunk mode;
- One stream channel for original 2D image from the right camera via image payload with extended chunk mode; and
- eBUS Receiver obtains the multi-part 3D data for handoff to processing software (end-user does not have to write a low-level GigE Vision multi-part receiver.) The data can also be received by a multi-part capable third-party receiver application.

Multi-source is not specific to 3D, it could also be used to send (or transmit) one stream channel of uncompressed data and one stream channel of compressed data, or aggregating multiple sensor sources into a single physical link.

Features

- Tiered licensing options to add GigE Vision connectivity to high-end imaging devices and price-sensitive applications including embedded devices
- Allows developers to create a software-based GigE Vision 2.1 and GenICam compliant device with support for various payload types, e.g: multi-part support for 3D data transmission, chunk data payload for transmission of raw chunks, image payload support with extended chunk mode for transmission of 1D/2D image data with associated metadata
- Write your code once and deploy it on different operating systems
- Designed for both Intel and ARM architectures and compatible with all sensor and camera types
- Includes GigE Vision Streaming Protocol (GVSP) and GigE Vision Control Protocol (GVCP)
- Customizable GenICam (GenApi) interface, for different sources
- Persist user configuration across power cycles
- Add multiple stream channels for multi-source devices

Supported Operating Systems

- Windows 7/8.1/10 (32-bit and 64-bit*)
- Windows 11 (64-bit)
- Linux x86:
 - Ubuntu 18.04/20.04/22.04 LTS (64-bit)
 - CentOS 8 Stream (64-bit)
 - RedHat 8 (64-bit)
- NVIDIA Jetson ARM devices supporting JetPack 4.6, JetPack 5.1 or JetPack 6.0
- Raspberry Pi 4B and Raspberry Pi 5 devices supporting Raspberry Pi OS (64-bit, Debian 12 based, Kernel 6.1)

*Python support only available for 64-bit Windows

