

PLEORA TECHNOLOGIES INC.



eBUS SDK 7.0 GStreamer Plugins Support



Table of Contents

1	Architecture	3
2	Data Flow Diagram	5
3	Virtual Device Pipeline.....	6
4	Plugin Features.....	7
4.1	ebusvideosrc Features	7
4.2	ebusvideosink Features	8
5	Usage	10
5.1	Environment Setup	10
5.2	ebusvideosrc - Video Source	10
5.3	ebusvideosink - Video Sink	11
5.4	Advanced Usage.....	12
5.5	Known Issues.....	12
5.6	Troubleshooting.....	13

Document Number and Revisions

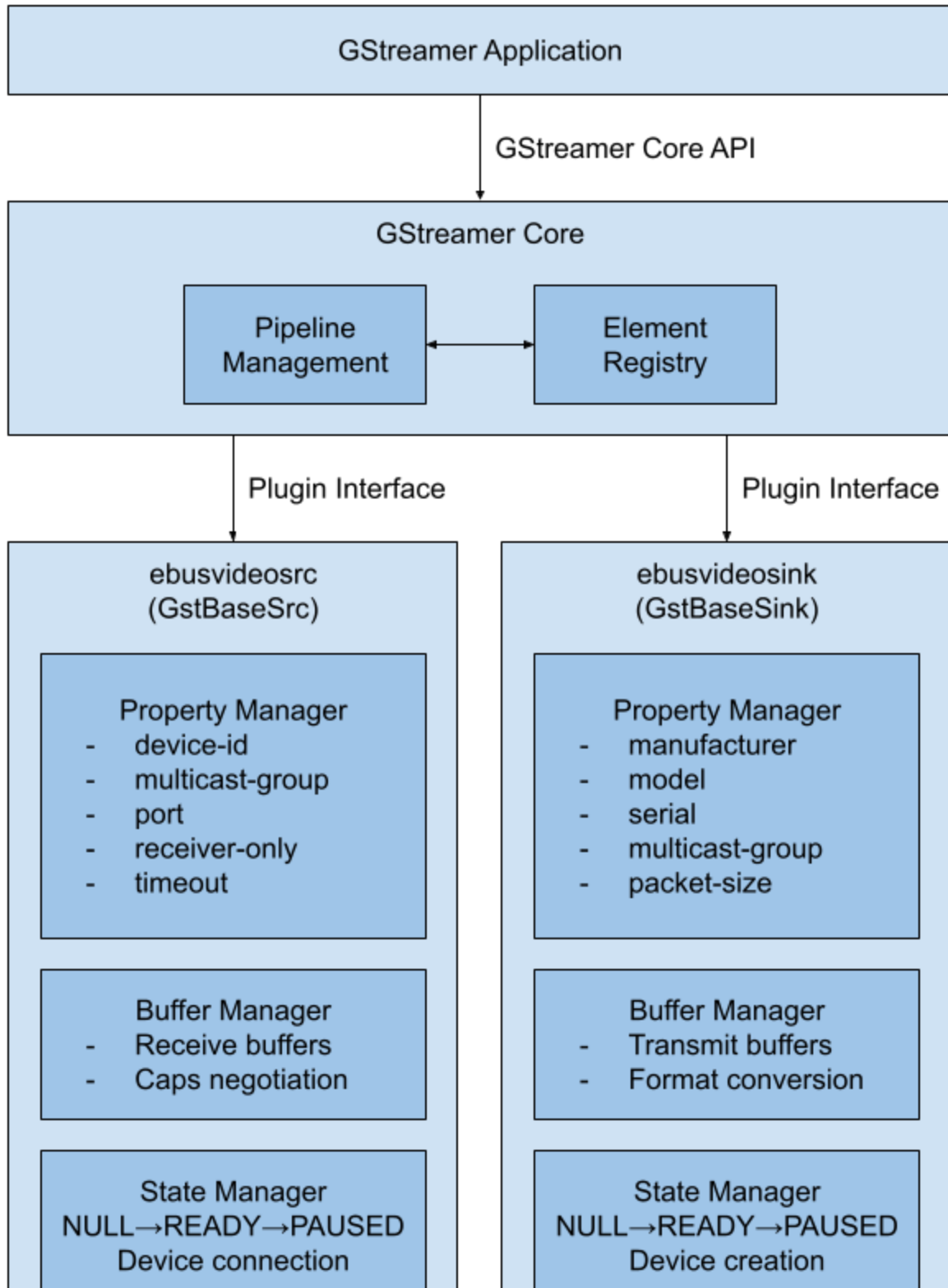
Document ID: MN-0078

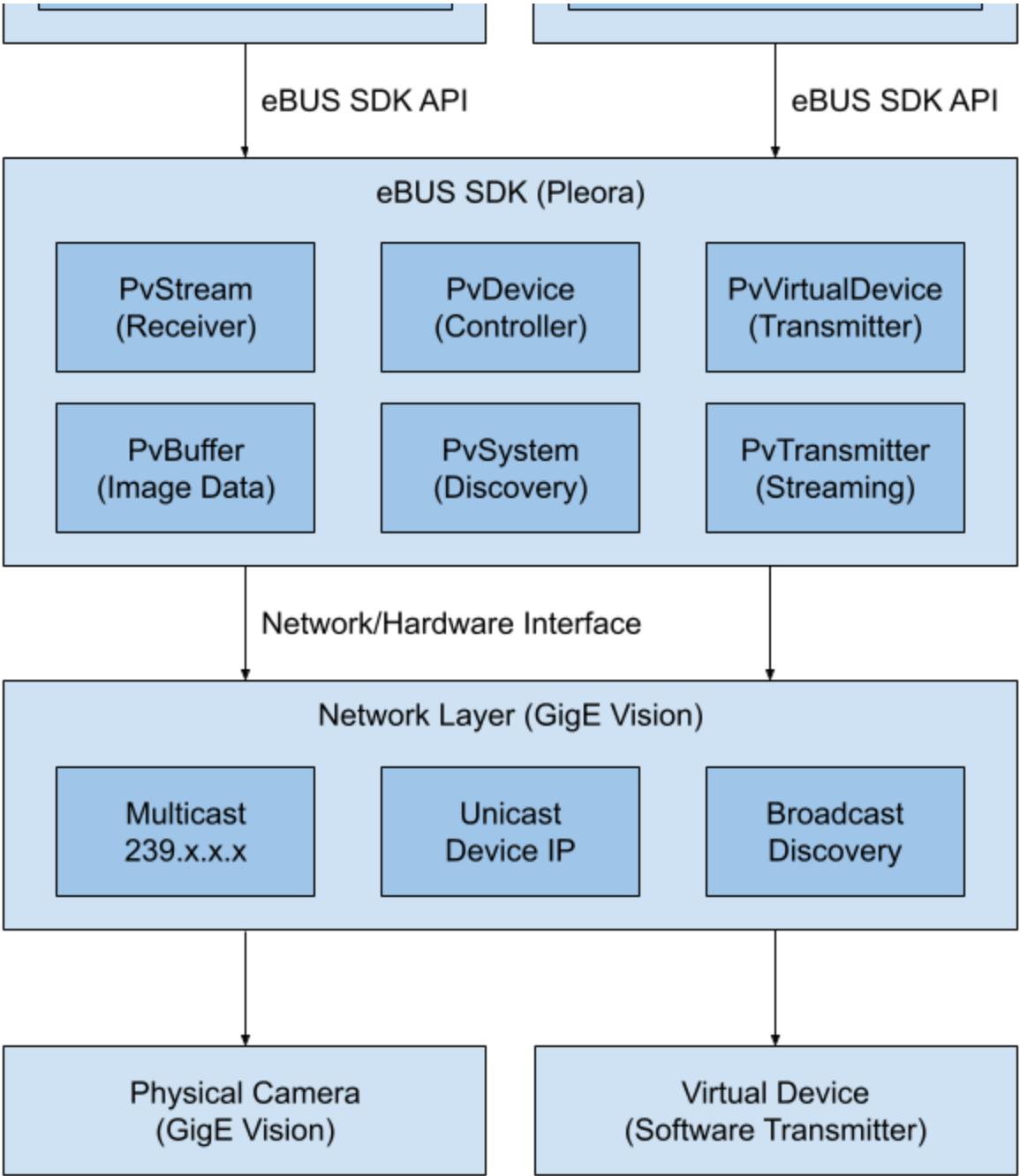
Revision	Reason for Revision	Date
1.0	Initial Release with eBUS 7.0	January 2026

A GStreamer plugin providing source and sink elements for Pleora eBUS SDK, enabling video streaming from and to GigE Vision. Starting eBUS SDK 7.0 Release we will be providing additional support feature:

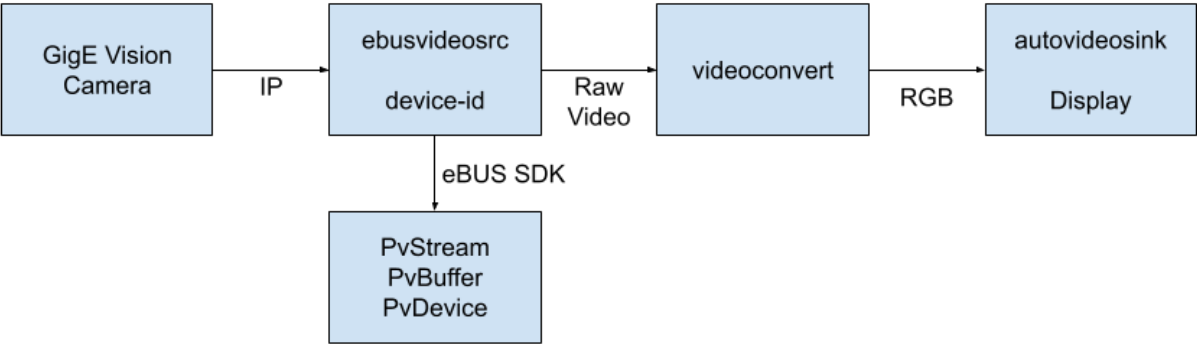
- eBUS SDK GStreamer Plugins:
 - `ebusvideosrc` : Receive video from Pleora eBUS devices (GigE Vision).
 - `ebusvideosink` : Transmit video streams as a virtual GigE Vision device (eBUS Edge).

1 Architecture

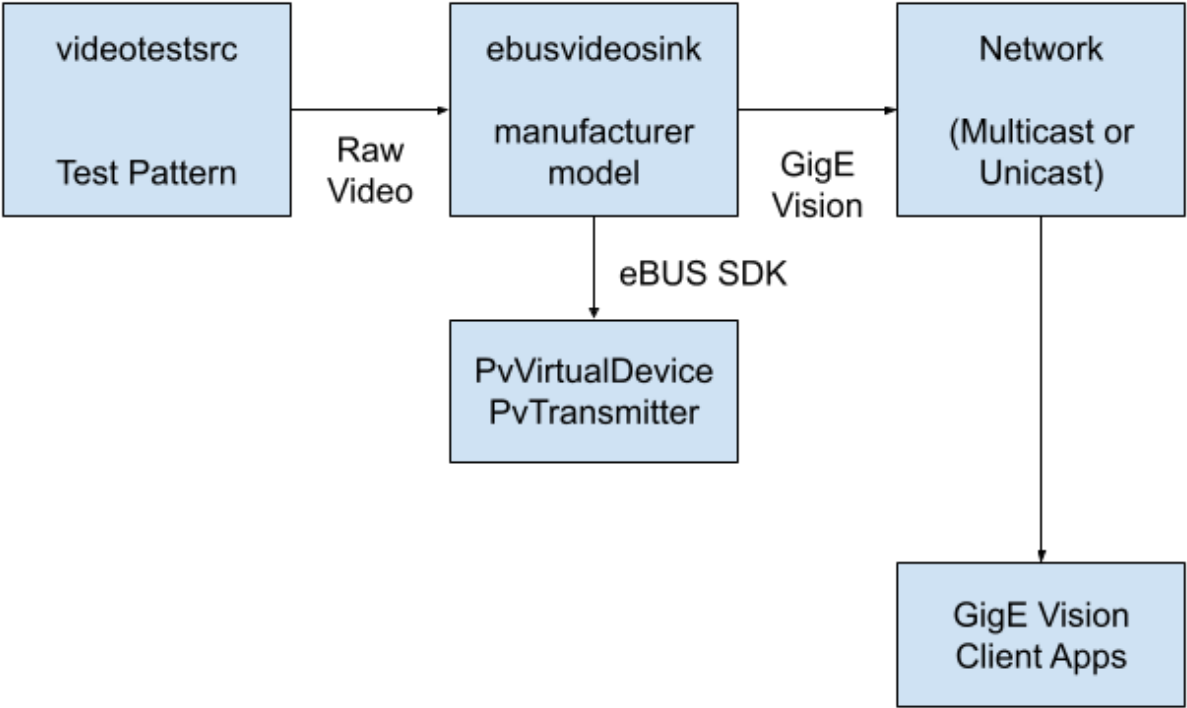




2 Data Flow Diagram



3 Virtual Device Pipeline



4 Plugin Features

4.1 ebusvideosrc Features

Feature	Description	Property	Example
Device Discovery	Auto-detect GigE Vision devices	device	device="192.168.1.100"
Multicast Receiver	Receive from multicast stream	receiver-only multicast-group port	receiver-only=true multicast-group="239.192.1.1"
Timeout Control	Configure acquisition timeout	timeout detection-timeout	timeout=5000 (5 seconds)
Buffer Management	Control number of capture buffers	num-capture-buffers	num-capture-buffers=16
Format Support	Multiple pixel formats	Auto-negotiated	Mono8, RGB8, YUV422, etc.
Resolution Support	Any resolution supported by device	Auto-negotiated	VGA, HD, 4K, custom
Framerate Control	Match device framerate	Auto-negotiated	30fps, 60fps, etc.
Packet Size	Configure network packet size	packet-size	packet-size=1500

Feature	Description	Property	Example
GUI Control	Optional GUI for device selection Note: requires eBUS SDK built with GUI	<code>enable-gui</code>	<code>enable-gui=true</code>

4.2 ebusvideosink Features

Feature	Description	Property	Example
Virtual Device	Create software GigE Vision device	<code>manufacturer</code> <code>model</code> <code>serial</code>	<code>manufacturer="Pleora"</code> <code>model="VirtualCam"</code>
Multicast Streaming	Stream to multicast group	<code>auto-multicast</code> <code>multicast-group</code> <code>port</code>	<code>auto-multicast=true</code> <code>multicast-group="239.192.1.1"</code>
Unicast Streaming	Stream to connected clients	Default mode	Automatic
Device Info	Configure device metadata	<code>info</code> <code>version</code>	<code>info="Test Device"</code> <code>version="1.0"</code>
Network Config	Set IP and MAC address	<code>address</code> <code>mac</code>	<code>address="192.168.1.200"</code> <code>mac="00:11:22:33:44:55"</code>
Buffer Management	Internal buffer allocation	<code>num-internal-buffers</code>	<code>num-internal-buffers=4</code>

Feature	Description	Property	Example
Packet Size	Configure transmission packet size	<code>packet-size</code>	<code>packet-size=9000</code> (Jumbo)
Format Support	Multiple pixel formats	Auto-negotiated	RGB, YUV, Mono
Discovery Protocol	GigE Vision device discovery	Automatic	Visible to all clients

5 Usage

5.1 Environment Setup

Ensure eBUS SDK environment is configured:

```
# If using installed SDK
source /opt/pleora/ebus_sdk/Ubuntu-<version>-<arch>/bin/set_puregev_env.sh

# If using development build
source /path/to/ebus/sdk/build/set_linux_env.sh
```

5.2 ebusvideosrc - Video Source

Receive video from GigE Vision compliant devices.

Available properties:

```
gst-inspect-1.0 ebusvideosrc
```

5.2.1 Examples

1. Display video from a camera:

```
gst-launch-1.0 ebusvideosrc device=<gev_camera_ip> ! videoconvert ! autovideosink
```

2. Specify camera resolution:

Note: The camera resolution specified should match the camera resolution already set on the Hardware.

```
gst-launch-1.0 ebusvideosrc device=<gev_camera_ip> ! \
    "video/x-raw, format=RGB, width=1920, height=1080" ! \
    videoconvert ! autovideosink
```

3. Stream to RTSP server:

```
gst-launch-1.0 ebusvideosrc device=<gev_camera_ip> ! videoconvert ! \
    x264enc tune=zerolatency bitrate=8000 ! \
```

```
rtspclientsink location=rtsp://localhost:8554/camera1
```

4. Interactive device selection with GUI:

```
gst-launch-1.0 ebusvideosrc enable-gui=true ! videoconvert ! autovideosink
```

Note: Requires eBUS SDK built with PvGUI support.

5. Save video to file:

```
gst-launch-1.0 -e ebusvideosrc device=<gev_camera_ip> ! videoconvert ! \
  x264enc ! mp4mux ! filesink location=output.mp4
```

5.3 ebusvideosink - Video Sink

Transmit video as a virtual GigE Vision device using eBUS Edge.

Available properties:

```
gst-inspect-1.0 ebusvideosink
```

5.3.1 Examples

1. Stream test pattern:

```
gst-launch-1.0 videotestsrc pattern=snow ! \
  video/x-raw,width=1280,height=720 ! videoconvert ! \
  ebusvideosink mac=<network_mac_addr>
```

2. Stream from webcam:

```
gst-launch-1.0 v4l2src device=/dev/video0 ! \
  image/jpeg,width=640,height=480,framerate=30/1 ! \
  jpegdec ! videoconvert ! \
  ebusvideosink mac=<network_mac_addr>
```

3. Stream video file:

```
gst-launch-1.0 filesrc location=/path/to/video.mp4 ! \
  qtdemux ! h264parse ! avdec_h264 ! videoconvert ! \
  ebusvideosink mac=<network_mac_addr>
```

4. Stream HTTP MJPEG:

```
gst-launch-1.0 souphttpsrc location=http://camera.example.com/stream ! \
  jpegdec ! videoconvert ! \
  ebusvideosink mac=<network_mac_addr>
```

5.3.2 Common Properties

- `mac` - MAC address of NIC to bind to (or `address` for IP)
- `manufacturer` - Virtual device manufacturer name
- `model` - Virtual device model name
- `serial` - Virtual device serial number
- `auto-multicast` - Automatically multicast without controller
- `multicast-group` - Multicast IP address (default: 239.192.1.1)
- `packet-size` - GigE packet size in bytes (default: 1492)
- `num-internal-buffers` - Number of internal buffers (default: 3)

5.4 Advanced Usage

5.4.1 Configuration Files

Load camera settings from a .pvcfg file:

```
gst-launch-1.0 ebusvideosrc device=<gev_camera_ip> \
  config-file=/path/to/camera_config.pvcfg \
  config-file-connect=false ! videoconvert ! autovideosink
```

5.4.2 Chunk Data / Metadata

Enable chunk data reception:

```
gst-launch-1.0 ebusvideosrc device=<gev_camera_ip> output-klv=true ! ...
```

Chunk data is added as custom metadata to GStreamer buffers.

5.5 Known Issues

When using GStreamer `ebusvideosink` with certain webcams, attempting to change Width or Height may cause the pipeline to crash and dump. Issue ID [EBUS-7183](#)¹

5.6 Troubleshooting

5.6.1 Plugin Not Found

If `gst-inspect-1.0 ebusvideosrc` fails:

1. Check installation:

```
find /usr/lib -name "libgstebusplugin.so"
```

2. Verify GStreamer sees it:

```
gst-inspect-1.0 | grep ebus
```

3. Manually set plugin path:

```
export GST_PLUGIN_PATH=/path/to/build
```

5.6.2 eBUS SDK Not Found

```
error: PvDevice.h: No such file or directory
```

Solution: Set `EBUS_BUILD` or install eBUS SDK:

```
./build.sh -DEBUS_BUILD=/opt/pleora/ebus_sdk/... linux-x86_64-release
```

5.6.3 Camera Not Detected

1. Check network connectivity.
2. Verify eBUS SDK can see device:
Use ebus player to verify connectivity and if successful then gstreamer should work as well.
3. Check firewall settings.

1. <https://pleora.atlassian.net/browse/EBUS-7183>

5.6.4 Performance Issues

1. Increase buffer count:

```
ebusvideosrc num-capture-buffers=32
```

2. Enable jumbo frames:

```
ebusvideosrc packet-size=9000
```

3. Use receiver-only mode if not controlling camera:

```
ebusvideosrc receiver-only=true
```

Technical Support

On the Pleora Support Center, you can:

- Download the latest software and firmware.
- Log a support issue.
- View documentation for current and past releases.
- Browse for solutions to problems other customers have encountered.
- Read knowledge base articles for information about common tasks.

To visit the Pleora Support Center:

- Go to supportcenter.pleora.com.
- Most material is available without logging in to a Support Center account.
- To access software and firmware downloads, in addition to other content, log in to the Support Center.
- If you do not have an account, click Request Account.
- Accounts are usually validated within one business day.

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