# iPORT SB-GigE External Frame Grabbers

*Leverage the long-distance cabling and multicasting capabilities of GigE for Sony block cameras*

Pleora's iPORT™ SB-GigE External Frame Grabbers improve the usability of Sony block cameras by allowing systems manufacturers and integrators to treat them as native GigE Vision® cameras. With these external frame grabbers, Sony block cameras can leverage the simple, long-distance cabling of Gigabit Ethernet (GigE) for both video and control signals. The cameras can also be used with a broader selection of computing platforms, lowering system costs.

The SB-GigE presents a user friendly interface to the Sony® VISCA™ protocol set, both graphically and in the eBUS SDK (software development kit) . This allows system designers to rapidly prototype interactions between the SB-GigE, the Sony block camera, and their software as well as quickly deploy production-ready software.

The SB-GigE transmits full-resolution video with low, predictable latency over a GigE link. The connection at the PC is a standard GigE plug, eliminating the need for a desktop PC with an available peripheral card slot for a traditional  frame grabber.

As a result, system designers can reduce system size, cost, and power consumption by using computing platforms with smaller form factors, such as laptops, embedded PCs, and single board computers.

GigE supports cabling distances of up to 100 meters using standard CAT5e/6 cabling. Deploying an off-the-shelf Ethernet switch, extended distances and more flexible network configurations are supported. Multiple cameras can be aggregated to a single port, imaging data can be multicast from one camera or image sensor to multiple displays, or images from multiple cameras can be combined on one computer or processing unit.

A sophisticated on-board programmable logic controller (PLC) and support for the IEEE 1588 Precision Time Protocol allows users to precisely measure, synchronize, trigger, and control the operation of other vision system elements.

The SB-GigE is bundled with Pleora's feature rich application toolkit, eBUS™ SDK, and compatible with Pleora's vDisplay™ External Frame Grabbers, which deliver video directly to a monitor.

## Features

- Transforms Sony block cameras into GigE Vision cameras
- Power, control, and video over the same cable
- Plugs into a wide range of computing platforms without needing a PCI frame grabber
- Transmits full-resolution images at the maximum rate supported by the block camera
- Converts video to 8-bit Bayer (color) or 8-bit monochrome formats to conserve bandwidth (except in 1080p modes at 50 fps or higher)
- Simplifies Sony VISCA interface
- Synchronizes image capture with other elements of the system
- Low, predictable  latency

## Compatibility

- Sony FCB-EV7500
- Sony FCB-SE600
- Sony FCB-EV7100
- Sony FCB-EV5500
- Sony FCB-EH6500
- Sony FCB-EH6300
- Sony FCB-EH3410
- Sony FCB-EH3310

**Pleora** Technologies

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## Networked Video Connectivity Solutions

| | |
|---|---|
| **iPORT External Frame Grabbers** | · Highly reliable, 1 Gb/s data transfer rate with low, end-to-end latency<br>· OEM, in-camera board set |
| eBUS SDK | · eBUS Universal Pro driver<br>· Sample applications, including NetCommand™ sample application, a demonstration of multi-device network connectivity<br>· Driver installation tool<br>· Documentation |
| **GigE Vision and GenICam™** | · Fully-compatible firmware load<br>· Guarantees delivery of all packets<br>· Comprehensive data transfer diagnostics |

## Video Formats

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|---|---|
| **Video acquisition** | · Digital video interface |
| **Input Resolutions** | · Full resolution images<br>· 1080p, 25/29.97/30Hz<br>· 1080i, 50/59.94/60Hz<br>· 720p, 25/29.97/30/50/59.94/60Hz<br>· Sony FCB-EV7500: 1080p, 50/59.94/60Hz |
| **Pixel formats** | · Mono8 (8 bits per pixel)<br>· BayerGR8 (8 bits per pixel)<br>· YUV 4:2:2 (16 bits per pixel)<br>· YUV 4:1:1 (12 bits per pixel) |

## Features

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|---|---|
| **Gigabit Ethernet-based** | · Connection to low-cost, easy-to-use equipment<br>· Compatible with 10/100/1000 Mb/s IP/Ethernet networks<br>· Supports IEEE 802.3 (Ethernet), IP, IGMP v.2, UDP, ICMP (ping), and IEEE 1588 Precision Time Protocol (PTP)<br>· Long reach: 100 m point-to-point, further with Ethernet switches |
| **Multicast capability** | · Enables advanced distributed processing and control architectures |
| **Mechanical Bracket** | · Easy assembly with Sony block cameras |

## Connectors

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|---|---|
| **12-pin circular connector** | · GPIO<br>· RS-232 serial communication interface<br>· External power (optional) |
| RJ-45 jack | · Network/computer interface<br>· Power over Ethernet (PoE) |
| **30-pin connector** | · Sony block camera interface (cable provided)<br>· Digital video interface: 4 lanes of LVDS, 8 lanes for FCB-EV7500<br>· VISCA serial command interface<br>· Power for block camera |

## Characteristics

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|---|---|
| **Size** (L x W x H) (Without bracket) | · 37 mm X 37 mm X 34.3 mm |
| **Operating temperature** | · 0°C to 60°C |
| **Storage temperature** | · -40°C to 85°C |
| **External power supply** (when not using PoE) | · 4.8 V to 16 V |
| **Power consumption** (Typical, incl. block camera) | · **Sony FCB-EH3310, FCB-EH3410: 5.7 W**<br>· **Sony FCB-EH6500, FCB-EH6300: 6.1 W**<br>· **Sony FCB-EV5500: TBD**<br>· **Sony FCB-EV7100: TBD**<br>· **Sony FCB-EV7500: 5.8 W**<br>· **Sony FCB-SE600: TBD** |

## *Ordering Information*

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|---|---|
| 900-6117 | · **iPORT SB-GigE External Frame Grabber OEM Kit includes SB-GigE OEM board set mounted on camera bracket, mounting screws, external GPIO board option including flat flex cable and loose 12-pin circular connector, and 30-pin micro-coaxial video/control camera cable.** |
| 900-6119 | · **iPORT SB-GigE Development Kit includes SB-GigE OEM board set mounted on camera bracket and GPIO bracket extension, mounting screws, external GPIO board option including flat flex cable and soldered 12-pin circular connector, 30-pin micro-coaxial video/control camera cable, Gigabit Ethernet desktop NIC, PoE injector, 2 Ethernet cables, power supply, and eBUS SDK USB stick.** |