

DESIGN BRIEF

Military Vetronics Systems

Gigabit Ethernet is a natural choice for video transmission within military ground vehicles, due to its lightweight cabling, networking capabilities, and support for a range of different computing platforms

Pleora's **iPORT™ External Frame Grabbers** help increase the reliability, capability, and performance of military vision systems, while reducing design and operating costs, by integrating cameras, displays, and processing/mission control computers into a real-time video network based on the widely adopted **GigE Vision®** standard.

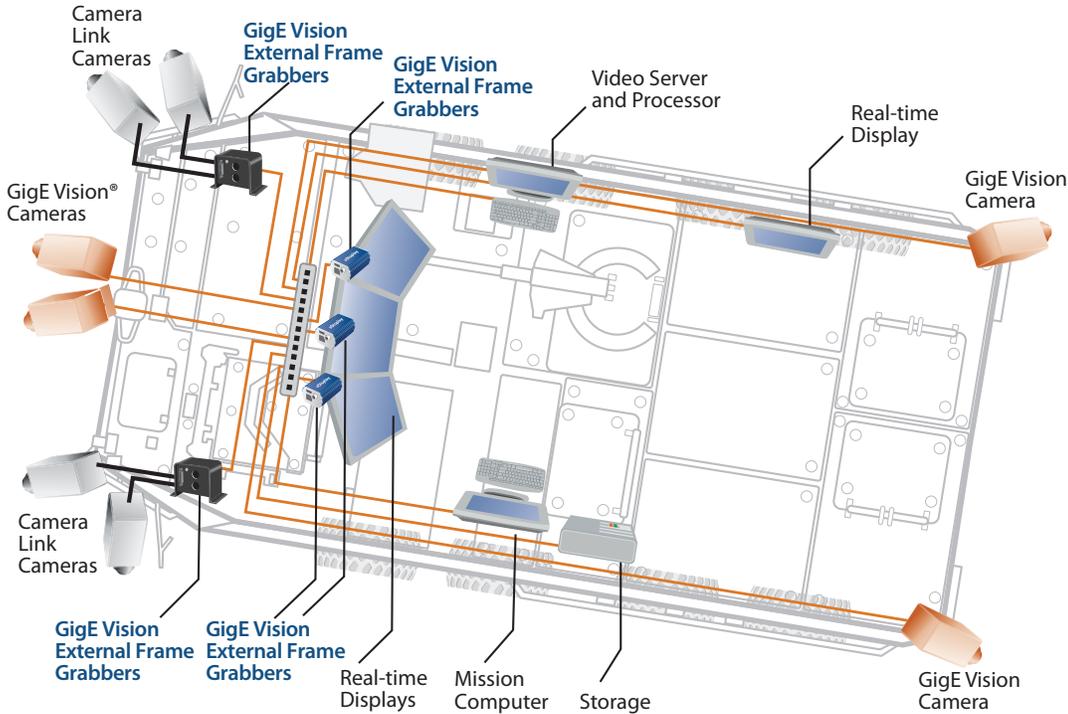
In an LSA application, real-time video from cameras and sensors is transmitted to display panels for crew members to navigate the windowless vehicle and survey surroundings. As illustrated, **iPORT CL-GigE External Frame Grabbers** convert video from Camera Link cameras into a GigE Vision image stream. In analog camera-based systems, Pleora's **iPORT Analog-Pro External Frame Grabbers** convert video into a GigE Vision image stream.

The video is streamed uncompressed with low, consistent "glass-to-glass" latency over the multicast Ethernet network to displays and processing equipment within the vehicle. Video, control data, and power are transmitted over the single cable; lowering component costs, simplifying installation and maintenance, and reducing "cable clutter" in the vehicle.

All computers used for processing and mission control connect to the network via their standard Ethernet port, eliminating the need for a computing platform with an available peripheral card slot. Instead, system designers can employ ruggedized laptops, embedded PCs, or single-board computers for image analysis and control to help lower costs, improve reliability, and meet SWaP objectives.

The point-to-point and point-to-multipoint networking flexibility of GigE allows images from multiple cameras/sensors to be aggregated to a single port on a mission computer or processing unit, and/or imaging data to be multicast from one camera/sensor to multiple displays. Pleora's external frame grabbers can multicast image data to multiple computing platforms simultaneously using an off-the-shelf Ethernet switch. At display panels, **vDisplay External Frame Grabbers** receive GigE Vision video data and output it in real time with low, consistent latency over an HDMI/DVI interface.

Troops can decide "on the fly" which video streams they need to see, without any changes to cabling or software configurations, or use the on-board mission computer to combine images for use by others in the vehicle. For example, the video feed from a visible light camera can be converted to GigE and blended with video from a native GigE thermal camera to provide more detail on a region of interest.



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