

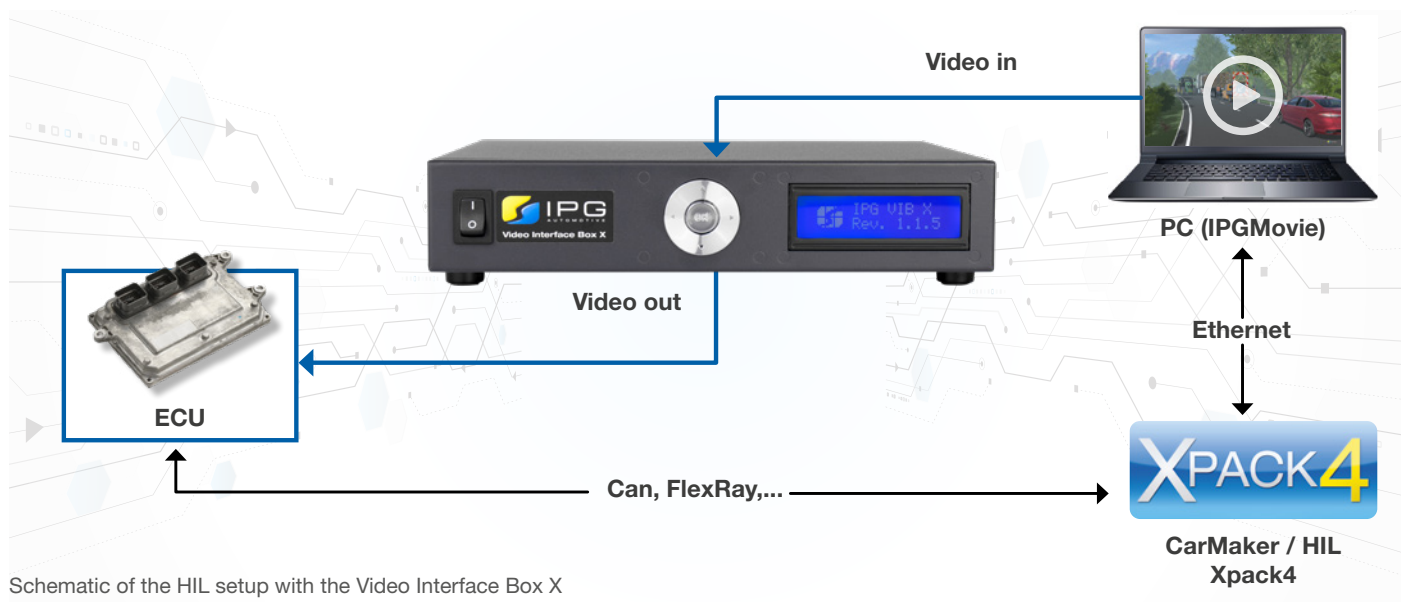
Video Interface Box X

Tests of camera-based systems made easy through direct injection of image data

Image data can be directly fed into the ECU under test via the Video Interface Box X. The image sensor and lens are separated from the rest of the camera system. For the resulting interface, off-the-shelf standard hardware interfaces are available as well as customized solutions. As the optical path, consisting of the lens and the color filter attached to the sensor, is removed, these components must be modeled within the visualization. This is achieved using the Physical Sensor Models, an add-on to the visualization software IPGMovie. IPGMovie is then utilized for the parameterization of the image output. The software is connected to the Video Interface Box X via the DisplayPort

output of a standard graphics card, ensuring an efficient and low-latency transmission of the image data with exact and reliable timing. The Video Interface Box X distributes the image data across up to four different channels and adds information which corresponds to that of a real camera. Different algorithms can now be tested via the ECU.

The Video Interface Box X therefore integrates perfectly into the HIL test setup from IPG Automotive. The reliable and powerful real-time solution from IPG Automotive Xpack4 system is an ideal complement.



Your benefits at a glance

- Improved tests of camera-based assistance systems thanks to direct injection of image data
- Avoiding imprecise input data for light assist functions caused by monitors with low light intensity and low contrast
- Preventing false responses of the algorithms due to a lack of synchronization between the image generation on the screen and the image capturing of the camera on the Monitor HIL
- Ability to test camera systems with ultra wide-angle lenses (fisheye lenses)
- No support required to update the software
- Customizable imager emulation through C code API Video Interface Box X
- Remote control via Ethernet Video Interface Box X

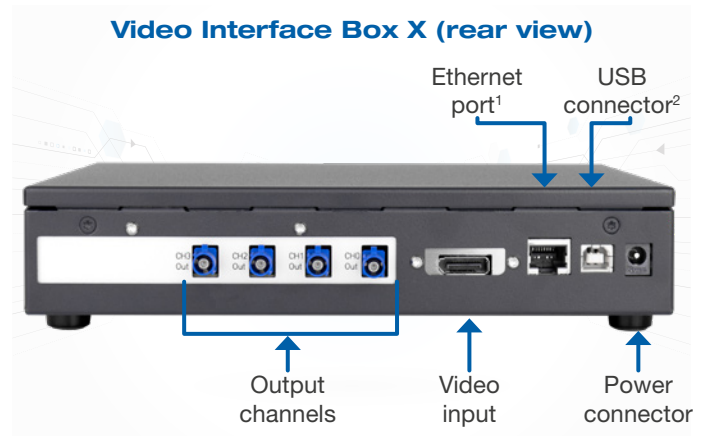
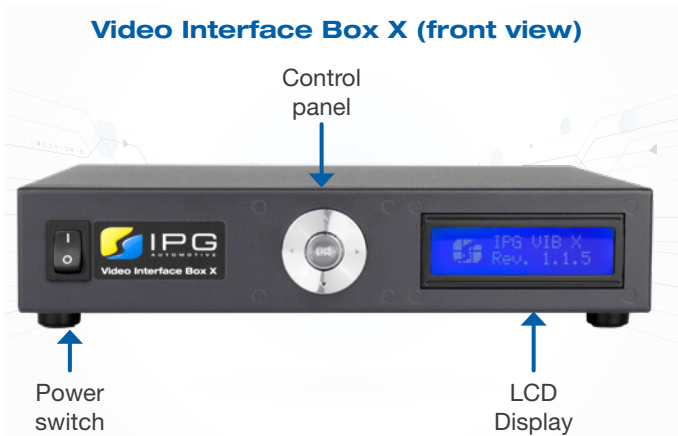
Configurable Parameters	Emulation of the imager Initialization of the serializer Video output format <ul style="list-style-type: none"> ■ Resolution ■ Horizontal blanking timings ■ Vertical blanking timings Embedded data values	VIB X API (user interface)
	Pixel clock frequency	
Emulated Imagers	ON Semiconductor: ASX340, AR0220AT, AR0132AT, AR0138AT, AR0143AT, AR0231AT	Omnivision: OV9716, OV0X3A, OV10635, OV10640, OV10642

Further imagers on demand!

Note: An image sensor emulation is part of FPGA and C code with which the Video Interface Box mimics the real sensor's behavior. All listed emulations are developed to a degree that fulfills the ECUs' requirements from one or more projects. If a new, different ECU is used, it is likely that adaptations of the emulation will be necessary.

Power supply:	100–240V, 50/60Hz
Temp. Range:	0°–55°C
Dimensions:	220 x 177 x 44mm (W x D H)
Input:	DisplayPort with up to 8.64 Gbit/s
Output:	up to 4 cameras (channels) per Video Interface Box X, 8.64 Gbit/s per VIB X unit
Contrast range:	> 8 bits per pixel
Interfaces:	VIBX_FPD_L_933, Serializer TI DS90UB933, VIBX_FPD_L_953, Serializer TI DS90UB953, VIBX_GMSL_9295, Serializer Maxim MAX9295, VIBX_GMSL_96705, Serializer Maxim MAX96705
Optics:	Realization of all optical effects in IPGMovie (lenses, color filters, etc.)
Latency:	Less than 20 µs without buffering

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¹: The Ethernet port enables to access the Video Interface Box X through remote control via the network.

²: The USB port updates (flashes) the camera application on the Video Interface Box X.

➤ Find more information on the Video Interface Box X on our website at www.ipg-automotive.com/video-interface-box-x



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