IMAGING SUPPORT

BitBox

The BitBox extends BitFlow's cutting edge technology out of the PC and into the machine of an industrial vision application.

BitFlow > Peripherals > BitBox

Introducing The BitBox

The BitBox is BitFlow's new solution for high density I/O applications. Many machine makers require a large number of computer managed I/O signals for continuous control of the system state. This means controlling devices such strobes, solenoids, actuators, indicators etc. as well as gathering inputs from photo-detectors, switches, encoders and triggers. In general, BitFlow frame grabbers come with a fairly large number of inputs and outputs, but for some systems this is simply not enough. Most customers end up purchasing another device to manage the I/O, which adds expense, requires another slot, another driver and SDK, another manual, etc. The BitBox has been designed for just this situation. It is controlled completely from the frame grabber, uses the same API, driver and manuals as the frame grabber. This saves time, money, space, and learning curve.

The BitBox Concept

Traditional I/O cards put all of the transmitters and receivers on the actual board in the PC. This requires bringing all of the I/O wires from their sources to the PC, which is often located quite a distance from other equipment. With the BitBox, all the transmitters and receivers are located right in the BitBox, on the rail, close to the other equipment.

Control is facilitated by a small high speed cable which goes between the BitBox and the frame grabber. This cable can be up to 10 meters in length, providing maximum flexibility in positioning equipment inside the machine

Maximum Flexibility

BitFlow knows that the typical machine builder's design needs to interface with all kinds of equipment. The BitBox has been modeled with just this type of application in mind; TTL, LVDS, Open Collector, Opto-Isolated and 24 Volt signalling levels are all supported.

Another common issue is that there are never enough of any given type of I/O pins. Again, the BitBox has this problem covered by having 36 inputs and 36 outputs, all of which can operate simultaneously.

Locating

The BitBox can be located anywhere in your system. Only a small 15 wire cable goes between the frame grabber and the BitBox. BitFlow can provide these cables in various lengths or you can build your own. One advantage of this arrangement is that the high voltage signals are never brought into the PC. This isolation also adds electrical decoupling from noisy signals.

Frame Grabbers

Machine Vision Software Support

Application Development Software

BitFlow™

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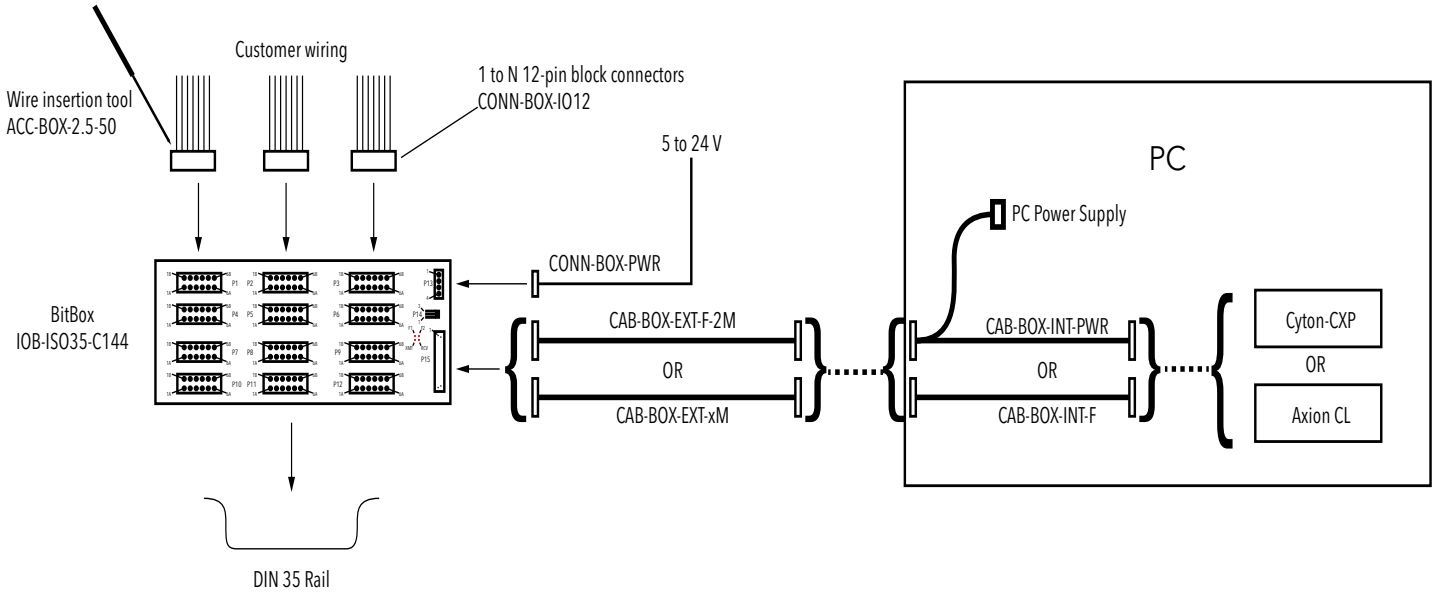
The BitBox Features

- 36 inputs, 36 outputs
- 12 TTL inputs, 12 TTL outputs
- 12 differential inputs, 12 differential outputs
- 8 Opto-isolated input, 8 Opto-isolated outputs
- 4 high voltage inputs (12 to 24 V), 4 high voltage outputs (Open Collector: 3.3 to 24V)
- Input levels can be read by software
- Inputs can be routed to the acquisition engine, Timing Sequencer trigger, camera, outputs
- Outputs can be static (software controlled), dynamic (from the Timing Sequencer) or sourced from other inputs
- DIN-35 Rail mountable
- LEDs indicate power, input activity, output activity
- Pins grouped in blocks of 12 signals, each block of 12 has its own connector
- Many different cabling options supported from frame grabber to BitBox
- Cables can be purchased from BitFlow or customer manufactured (simple connectors used throughout)
- Power requirements 5 to 24 VDC
- Support on the Axion and Cyton families
- The BitBox can be up to 10 meters away from the PC
- Supported under Windows and Linux

The BitBox in Action

The BitBox Cabling Options



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