

Eagle Digital RealTime System

The Eagle Digital RealTime System consists of Eagle Digital Cameras and Cortex software, which captures complex motion with extreme accuracy. Real-time capabilities allow our customers to see capture results at the same instant as the subject is performing a specific task. The Eagle can be mixed with other Motion Analysis digital cameras to optimize your capabilities.

Eagle Digital Camera

The Eagle Digital Camera, with a resolution of 1.3 million pixels at 1280 x 1024 full resolution at up to 500 frames per second, 1280 x 512 at 1000 frames per second, 1280 x 256 at 2000 frames per second, and a processing rate of 600 million pixels per second, revolutionizes the motion capture industry with its extreme resolution, unprecedented high frame rate, upgradeable functionality, and ease of use.

With today's motion capture facilities demanding multiple person capture within increasing volumes, the stability of the signal becomes critical. The Eagle Digital Camera signal goes directly to the tracking computer via an Ethernet connection. The signal processing is embedded in the camera. This streamlined system of motion capture from camera to computer means less hardware and less potential for equipment problems. The FPGA (field programmable field array) built into the Eagle is software and firmware upgradeable via the Internet - you don't even have to take the cameras down! Motion Analysis was the first company to manufacture digital cameras for motion tracking - the Eagle Digital Camera was introduced at SIGGRAPH 2001. Thousands of our digital cameras are currently in service.



The Eagle Digital Camera has a larger sensor area than standard video cameras. The corresponding use of a high quality 35mm lens allows for the sweet spot of the lens to map over this larger image sensor area, resulting in greater lens and system accuracy.

Calibration: The Key to Real Time

Motion Analysis uses a dynamic linearization technique which is the only technique currently available capable of producing precise and accurate calibration. First, a small four-point calibration device is used for defining the



XYZ axes. A 500mm wand (for large capture volumes) or a 150mm wand (for small capture volumes) is then used for establishing camera linearization parameters. If the camera lenses are changed, recalibration takes mere moments as compared to the cumbersome, time consuming grid technique used by other motion capture systems.

Features

- 1-2000 Hz selectable frame rates at full resolution
- Portable - up to 8 cameras in two suitcases
- Built-in zoom provides more visual options for ease of set-up
- High quality 35mm lenses for low optical distortion
- Separate zoom, iris and focus settings independent of ringlight
- Available with visible red, near red, or infrared ringlights
- LED display panel for camera identification and status
- 237 LED's for brighter and better light uniformity
- Strobed ringlight with camera body heat sink
- Four body mount points on camera for variable positioning
- Software controlled adjustable light output
- Software controlled electronic shutter



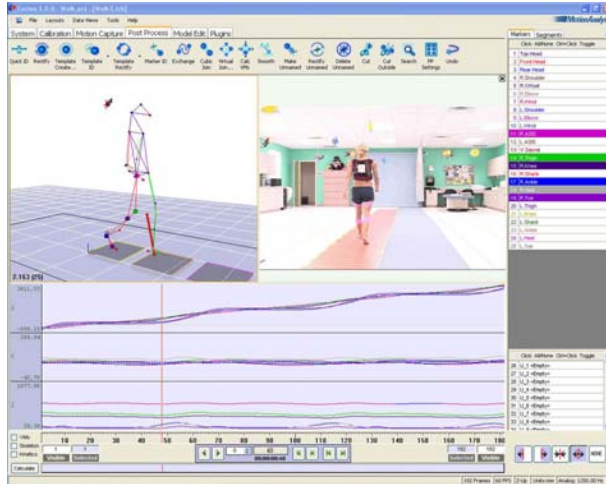
Simple and Customizable Interface

- Post processing provides one stroke hot keys for power users
- "Hot keys" are customizable - define your own system for processing actions
- Preferences for features such as initial monitor display, init poses, etc., can be named to an .ini file so that multiple system users are always assured of their customized configurations at login

Cortex

Cortex provides a user with a simple and powerful interface. Under a single software environment you can set up, calibrate, capture motion in real-time, capture motion for post processing, edit and save data in the format of your choice.

A dual monitor option provides the motion capture technician with a full view of the active capture display and graphic panels on one monitor while viewing application forms and panels on another monitor.



Simultaneous Display of Panels

The Eagle Digital RealTime System provides simultaneous viewing of up to four different panels:

- 3D Display - different views and angles are possible
- 2D Display - digital greyscale and threshold images
- Color Video Display (avi)
- XYZ Graphs
- Analog Graphs
- HTR Graphs

PowerHub

The Power Hub provides power for up to eight cameras. A single Ethernet Cat 5e cable is used for all signals and power between the cameras and the Power Hub.



Integration

- Fully compatible with Cortex or EVaRT software
- Standard TCP/IP Protocol
- 128 channels of synchronized 16-bit analog data acquisition (forceplate and EMG data)
- Exportable to all major animation packages

Additional Components

- Camera tripods or wall mounts
- Camera carrying cases
- Ethernet switch
- Calibration "L" frame and wand set
- Test cable and wireless controller
- Marker kit



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