

KODAK *EKtaPro* HS Motion Analyzer, Model 4540mx

HIGH SPEED VIDEO RECORDING

The KODAK EKTAPRO HS Motion Analyzer, Model 4540mx is an ultra high-speed digital video recording system with the ability to record up to 4,500 full frames per second, and up to 40,500 partial frames per second for immediate playback. These fast frame rates allow motion analysis and image storage of extremely rapid events such as air bag deployment, disk drive head movement, and ballistics studies.

INSTANT ANALYSIS

Operating as a digital image recorder, the system can store up to 24,576 full frames and up to 393,216 partial frames in electronic memory. Digital images can be replayed from memory for instant viewing.

POWERFUL TRIGGERING

The capture of unpredictable events is readily accomplished using the electronic triggering features of the Motion Analyzer. Trigger signals can be received from a variety of sources

including optical, acoustical, impact, acceleration, temperature and proximity sensors. Frames can be stored as pre-trigger or post-trigger images, or as a combination of both. Individual and discrete groups (2, 4, 16, 64, 128 and 256) of frames may also be recorded.

SHARP, CLEAR IMAGES

The 256 x 256 pixel sensor produces sharp images with 256 levels of gray. In addition, the light sensitivity of the system is excellent, reducing the need for supplemental lighting.

Once captured by the Model 4540mx, the stored images can be downloaded to standard video tape for future reference and analysis. Alternatively, using the optional Digital Data Interface the images can be transferred to a PC for viewing and automated motion analysis. The DDI uses a SCSI-2 interface to download industry standard TIFF files to the PC.

- **Exceptional High-Speed:**
Records up to 4,500 full frames per second or up to 40,500 partial frames per second.
- **Electronic Memory:**
Images are stored in digital memory and are available for immediate playback.
- **Large Format Sensor:**
256 x 256 pixels, each with a 256 gray level response.
- **Standard Video Output:**
For computer acquisition and VCR storage of images.
- **Digital Download Interface:**
Image transfer to a PC via SCSI-2 bus.



The EKTAPRO Motion Analyzer, Model 4540mx consists of an imager, processor, and a hand-held keypad.



MOTION ANALYSIS SYSTEMS DIVISION

KODAK EKTAPRO HS Motion Analyzer, Model 4540mx

SPECIFICATIONS



Processor

Hand-held Keypad:	For control of system operation. Cable length is 13 feet. Touch pad control.
Recording Technique:	Digital images stored in Dynamic Random Access Memory (DRAM).
Recording Modes:	START: Records images until memory is full and then stops. END: Continually records images until trigger is received. Pre-trigger frames are saved in memory. CENTER: Continually records images until trigger signal is received. When signal is received, half of the memory is saved as pre-trigger frames, and half are saved as post-trigger frames. RANDOM: 1, 2, 4, 16, 64, 128, and 256 frames are recorded after each trigger is received.
Recording Rates:	30, 60, 125, 250, 500, 750, 1125, 2250, 4500 full frames per second. 9000, 13500, 18000, 27000, 40500 partial frames per second.
Exposure Rate:	Exposures are inverse of frame rate.
Frame Storage Options:	8,192 full frames. 16,384 full frames. 24,576 full frames.
Playback Rates:	2, 5, 10, 15 or 30 frames per second (NTSC), and 2, 4, 8, 12 or 25 frames per second (PAL), plus single step and fast (10X) forward/reverse. User selectable block playback.
Video Output:	RS170 video in NTSC or PAL.
Data Displayed on Monitor:	ID number, record status, frame number, playback status, operating status, elapsed time.
External Signal Inputs:	Trigger IN (OPTO-ISOLATOR), Trigger SW IN (make/break), and EXT IN (external sync).
Signal Outputs:	Video 1 and 2, External out (switchable from sync to recording mode status). Digital Data Interface (DDI) for image transfer via SCSI-2 bus.
Size:	8.7"H x 16.9" W x 19.7"D (22.0 cm x 43.0 cm x 50.0 cm).
Weight:	44 lbs. (20 kg.).
Power:	110/220 VAC, 50/60 Hz, 500 VA.

Imager

Sensor:	256 x 256 pixels.
Gray Scale:	256 levels.
Lens Mount:	C-mount.
Imager/Processor Cables:	Standard length is 16 ft.
Size:	3.3" H x 3.3" W x 7.5" D (8.5 cm x 8.5 cm x 19.0 cm).
Weight:	2.6 lbs. (1.2 kg.).
Power:	Derived from processor.



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