June 1995

KODAK EktaPro HS Motion Analyzer, Model 4540

HIGH SPEED VIDEO RECORDING

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

INSTANT ANALYSIS

Operating as a digital image recorder, the system can store up to 5,120 full frames and up to 81,920 pictures in electronic memory. This solid state design eliminates the need for a built-in tape drive. Digital images can be replayed from memory instantly.

POWERFUL TRIGGERING

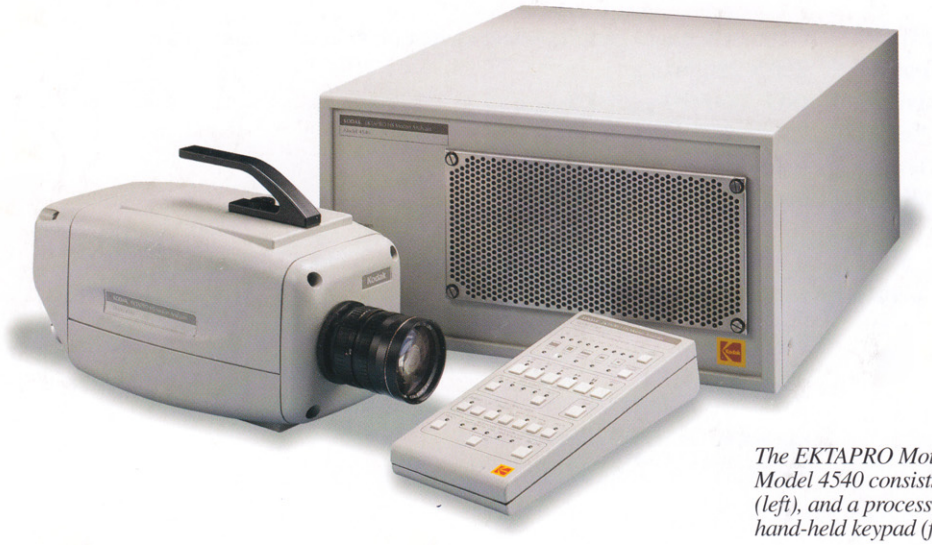
Capture of unpredictable events is readily accomplished using the electronic triggering features of the Motion Analyzer. These triggers can come from virtually any kind of sensor, including optical, acoustical, impact, acceleration, temperature and proximity sensors, to name a few. Frames can be stored either as pre-trigger or post-trigger images or as a combination of the two. Individual and discrete groups of two and four frames may also be recorded.

SHARP, CLEAR IMAGES

The 256 x 256 element sensor produces sharp images with 256 levels of gray. In addition, the light sensitivity of the system is excellent (equivalent to ISO 3000), reducing the need for supplemental lightning.

Once captured by the analyzer, the stored images can be downloaded to standard video tape for future reference and analysis.

- **Exceptional High-Speed:** Records up to 4,500 full frames per second or up to 40,500 pictures per second in partial frame mode.
- **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.



The EKTAPRO Motion Analyzer, Model 4540 consists of an imager (left), and a processor (back) with hand-held keypad (front).

KODAK EKTAPRO HS Motion Analyzer, Model 4540 – SPECIFICATIONS

Processor

Hand-held Keypad:	For control of system operation. Cable length is 15 feet.
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-event frames, half are saved as post-even frames. **RANDOM**: One, two or four frames (rear panel selectable) are recorded after each trigger received.
Recording Rates:	30, 60, 125, 250, 500, 750, 1125, 2250, 4500 full frames per second. 9000, 13500, 18000, 27000, 40500 pictures per second
Exposure Rate:	1/4500 of a second for all full frame recording rates. Exposures in partial frame recording mode are inverse of pictures per second rate.
Frame Storage Options:	1024 full frames. 3072 full frames. 5120 full frames.
Playback Rates:	2, 5, 10, 15 or 30 pictures per second (NTSC), 2, 4, 8, 12 or 25 pictures per second (PAL), plus single step and fast (10X) forward/reverse. User selectable block playback.
Video Output:	RS170 video in NTSC or PAL. Download to standard VCR tape.
Data Displayed on Monitor:	ID number, record status, frame number, playback rate, operating status.
External Signal Inputs:	Ext trigger 1 (TTL) and Ext trigger 2 (make/break).
Signal Outputs:	Video 1 and 2, External out (switchable from sync to recording mode status).
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

Controls:	Gain switch and gamma select switch on side of imager.
Sensor:	256 x 256 pixels.
Sensitivity::	ISO 3000 (Hi-gain setting).
Gray Scale:	256 levels.
Lens Mount:	C-mount.
Imager/Processor Cables:	Two required, standard length is 16 ft.
Size:	6.1" H x 6.1" W x 13.1" D (15.5 cm x 15.6 cm x 33.3 cm)
Weight:	12 lbs. (5.6 kg).
Power:	Derived from processor.

Specifications subject to change without notice.

EASTMAN KODAK COMPANY
Motion Analysis Systems Division
11633 Sorrento Valley Rd.
San Diego, California 92121-1097
TEL (619) 535-2908
FAX (619) 481-9142