DIGITAL VIDEO SYSTEM FOR SWALLOWING

Recording/ playback system of fluorographic and FEES exams

The complete system is housed on a mobile cart that can be transported to radiology or patient bedside for exam recordings.

Kay's Digital Video System for Swallowing (DVSS) sets a new benchmark in image quality and convenience for recording videoendoscopic, fluorographic, and other procedures. Patient exams are recorded directly to computer storage for instantaneous retrieval and playback of any exam segment. The digital video quality is excellent and is superior to previous generation recording technology based on analog tape. Kay's system has a considerable advantage over many other digital systems because entire exams can be recorded using state-of-the art compression algorithms which produce file sizes that are manageable; also, exams are recorded at full video resolution without skipped frames. Digitizing the video examination brings many convenient, timesaving benefits. For example, an exam can be located on the patient database, and viewed in seconds, because there is no need to rewind or fast-forward the tape; the user simply drags a slider to any segment of an exam for review. Comparing exams is also easy because DVSS allows two exams to be loaded and played side by side. An innovative archiving system designed into the Kay system keeps track of the location of old exams copied to external (numbered) media for easy retrieval.

A Powerful Image-Capturing System

DVSS includes all of the capabilities needed for both full-motion video and high-resolution still images. Video and audio (patient audio or examiner comments during the procedure) are captured together as a standard feature. The image quality is broadcast level with progressive scan display (no flicker) and is captured at a true 30 frames (60 fields) per second (in PAL video systems, these rates are 25 frames/50 fields per second). There are no motion artifacts or skipped frames. Starting and stopping data recording can be done through the keyboard, mouse, or with the footswitch provided with the system. The footswitch is helpful when the examiner is working without an assistant in the fluoroscopy suite or at patient bedside.

Instantaneous Exam Review

Exam playback with DVSS is immediate. The benefit in saved time is actually minutes per exam when compared to VCR-recorded exams. The user can quickly move to the beginning, or to any frame, of the exam and play the recording at either real-time rates or at user-selected, slow-motion rates.

Playback of Two Examinations Side by Side

Two exams can be loaded concurrently and compared side by side. This unique feature facilitates accurate assessment and in-depth comparative analysis of patient performance over time (e.g., before and after therapy). The most revealing still images can easily be captured for reports.

Professional-Quality Video

Medical records require high-quality video images without artifacts. Kay's DVSS includes a professional-level, video-capture, MJPEG-compression acquisition system with concurrent audio. It produces very accurate and artifact-free, broadcast-quality video images and is used in a number of demanding digital video environments such as commercial network broadcasting.

Built-in Patient Database

DVSS maintains a database of all patients with a listing of each of their exams automatically named by examination date/time. The system's software keeps track of the media containing each patient exam and its logged number so that clinicians can conveniently locate archived exam recordings. Each patient entry also contains associated demographic data, critical exam findings, and reports which are all linked within the database. This information is easily entered before or after a procedure. The database fields are user-editable so that each facility can customize them accordingly.

Fluorographic (i.e., modified barium) exams are recorded with excellent resolution and no motion artifacts. With digital recordings, the clinician can quickly locate any section of the exam for review and analysis. The system's printer can generate a hard copy report containing images of key exam findings.

Features

- Excellent image quality of videoendoscopic and fluoroscopic exams
- Immediate recall and playback of recorded studies
- Quick and easy comparison of two exams side by side
- Report generator containing critical exam findings
- Complete system on mobile cart can be rolled throughout hospital
- Compatible with all endoscopic systems (standard endoscopes, videoscope systems, esophagoscopes, etc.)

Patient Reports

Kay's system has an automatic report generator using Microsoft Word supplied with the system. Report templates allow the user to define which clinical information within DVSS software is to be sent to the report (e.g., patient demographics, video stills, exam comments, etc.). The system's printer can produce a hard copy of the report (with images) to place in the patient's chart or to use for insurance filing.

Connect to Fluoroscopy System with One Cable

The side of the DVSS cart contains a connector for easy hook-up to the hospital's fluoroscopy system(s) with a single cable. Examiners are then able to keep their own records of patient status and are not dependent on radiology to review exams at a later time. DVSS accepts standard video signals (either NTSC or PAL), but can be connected to hi-line systems by using a scan converter normally provided in fluoroscopy systems or available separately from Kay.

Compatible with Videoscopes and Esophagoscopes

DVSS is ideally suited as a digital recording system for existing endoscopic instrumentation as well as the more recently introduced videoscopes (i.e., chip-tip camera endoscopes) and esophagoscopes. These, and other, imaging tools can be conveniently integrated with DVSS as a complete endoscopic imaging platform. (Kay's Digital Strobe recording system can also be used with these imaging tools.)

Conversion to Other Video Data Formats

DVSS contains a proprietary video format, but exam clips can be easily edited and converted to common standards such as AVI or MPEG formats. These generic video formats are lower resolution than the native DVSS format, but have the advantage of being transportable (e.g., as an e-mail attachment) or placed into computer slide presentations. DVSS users can also obtain an optional viewing program to allow exams to be played in other computers in their native format without conversion.

KAY

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