



Send Streaming Video to PACS and Portable Media

Technology Designed for Medicine™

MDR® Video is a medical device which features technology to capture high-resolution streaming video clips in standard and proprietary formats from a wide range of modalities, record them in a DICOM format, send them to PACS and store them on DVD/CD or USB media.

Applications

MDR Video is ideal for use with c-arms, x-ray fluorography, angiography, ultrasound, endoscopy and vascular imaging systems. Its ability to capture long video segments and transfer full-motion clips to PACS or disk offers advantages for many non-DICOM and DICOM modalities. It improves workflow and communication in a wide range of clinical applications including speech pathology, echocardiology, endoscopy and radiotherapy planning. MDR Video is a self-contained, compact system which installs easily on portable modalities, surgical carts, and fluorographic systems.

Improved Workflow

MDR Video is always ready to store images on its large internal hard drive. It improves modality workflow as video capture, digitization and transfer to the network or media is performed as a background function without tying up the modality's system resources. Patient demographic information can be obtained from the network using DICOM Modality Worklist, by entering the data using the optional keyboard or reading the patient information from the image using automatic character recognition (ACR). Image capture can be tied into the modality exposure controls or use the included medical grade, shielded footswitch or optional handswitch. Configurable recording modes support the recording of long dynamic runs or single frames. A unique feature allows you to add user-defined text overlays to identify procedures during

review. MDR Video makes it easy to record only the clinically relevant data. This maximizes efficiency and productivity during the review process. MDR automatically transfers images to DVD, CD-R or USB media or directly to PACS as a DICOM Store SCU. When a review monitor is attached, MDR Video provides last cine playback and last image hold. Exams can be reviewed in-room on the MDR or may be transferred to PACS and viewed at a diagnostic workstation.

Highest Image Quality

Using NAI Tech Products' patent pending video capture technology, MDR Video provides digital image records of unparalleled quality. All images are recorded from the modality using the highest quality video output including high-resolution monochrome, RGB, X VGA and high definition video sources. MDR Video converts these into a DICOM format for storage and review. MDR Video's accurate video digitization, JPEG compression process and DICOM format ensures image quality is far superior to S-VHS, and MPEG formats. Highest image quality is particularly beneficial for speech pathology, cardiology, angiography, vascular and orthopedic applications.

MDR DICOM Viewer

MDR Video includes a powerful DICOM viewing utility which was developed specifically for the review of motion images in full resolution. The viewer is automatically burned to disk or USB and creates a patient index. MDR DICOM viewer allows images to be reviewed on any Windows® PC. It features effective reviewing tools including ultra-fast opening of clips and immediate playback. MDR DICOM Viewer has intuitive tools to trim segments to their clinically relevant parts and export cine clips and individual frames to email, and insert into reports or presentations.

Why MDR Video?

- Compatible with almost all video-based systems
- Expands capabilities of DICOM systems
- Modality Worklist, ACR or keyboard patient data entry
- Large capacity internal hard disk is always ready for recording
- Highest image quality
- Adds text overlays to images during recording
- Features last cine hold/playback and in-room review
- Records images to DVD, CD-R or USB media
- Single or multi-patient disks
- DICOM viewer for easy review and export from Windows® PC
- MDR media is DICOM Part 10 compatible for use with most PACS
- Transfers to network as DICOM Store SCU
- Audio recording capability (future software update)

Specifications

DICOM Part 10 Compatibility for Recorded Disks

Ethernet 10/100/1000Base T

DICOM Storage Class SCU

DICOM Storage Class SCP (option)

DICOM Modality Worklist

Video Input/Output

Automated video set-up utilities to configure capture of a wide range of standard and proprietary high resolution video formats

High resolution monochrome to 160MHz pixel clock frequency

High resolution RGB to 136MHz pixel clock frequency

Interlaced and non-interlaced formats

Monochrome up to 1280 x 1024 VGA

Standard NTSC/PAL S-Video formats

DVI-D input using DVI-D/VGA adapter (sold separately)

Video Record Rates

User selectable frame rates; full, 1/2, 1/3, 1/4, 1/5, 1/6, 1/7

Video Record Modes

Prospective - User defined limits, time and frame rate

Sequential - Conventional, Record Start/Stop control

Snapshot - High resolution still frames from streaming video

Image Review

Last cine hold/playback with frame by frame review

Last image delete

Image recall with frame by frame review

Image Compression*

JPEG

*JPEG 2000

Audio Input/Output

RCA input/output

Audio recording capability (future release)

Optional Accessories (sold separately)

-Compact Keyboard PS2/USB

-Dual remote input foot switch or interface cable

-Hand switch

-Monochrome input video cables

-VGA to VGA input cables

-DV I-D to VGA adapter

-Video splitter/amplifier

ACR - Automatic Character Recognition

-Patient Name

-Patient ID

-Accession Number

Media Formats

DVD+R (12cm 4.7GB) Typical data record rate 21.6MB/s

DVD±RW (12cm 4.7GB) Typical data record rate 10.8MB/s

CD-RW (12cm 700MB) Typical data record rate 2.4MB/s

USB 2.0

Storage Capability

All image data is cached to MDR's internal 250GB (minimum) hard drive with hours of video recording capacity which is always ready to record.

Maximum record length for DVD between 17.5 minutes and more than 120 minutes dependent on incoming video source specifications, frame rate, compression type and compression quality settings selected by the operator.

Playback Compatibility

Images may be viewed using any DICOM workstation with multiframe playback capability or Windows® PC with appropriate format drive, using the MDR DICOM Viewer written to MDR recorded media.

MDR DICOM Viewer

-Allows review of MDR recorded images in a DICOM format from any Windows® PC

-Supports fast and efficient playback of extended multiframe series and single images

-Features cine clip trim tools to set start and end frames for review and export of clips or single frames

-File export video clips and single frames from clips to DICOM and Windows® media formats

-Windows® printing and e-mail utilities

Media Import Function (option)

Physical Characteristics

Dimensions: H W D 132mm (5.6") x 270mm (10.6") x 366mm (14.5")

Weight: 5.45kg (12lbs.)

Power Input

100-240 V~, ± 10%, 47-63Hz, 126 VA

Classification

IEC 60601 Class I, No Applied Part

EN 60601-1-2 Class B, Group 1

IEC 60529, IP 21

Agency Approvals

UL 60601-1 (1st Edition);

EN 60601-1-2; CISPR 11B;

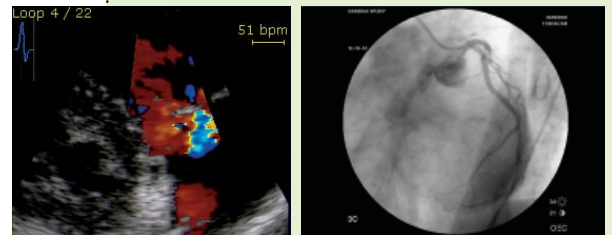
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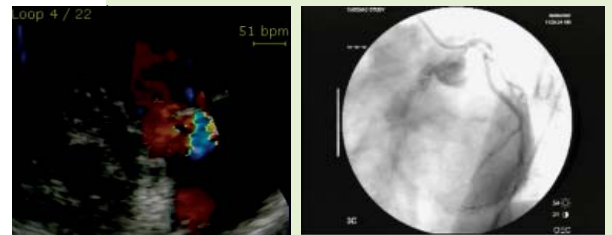
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Superior Image Quality

Compare the MDR image quality, clarity and details from high resolution monochrome and RGB sources with its competitors



MDR RGB INPUT TO DICOM OUTPUT



MEDICAL DVD RECORDER, S-VIDEO INPUT TO MPEG OUTPUT

MDR offers an improvement of more than 5 to 1 over standard S-video recorders



* Contact NAI regarding limitations and availability
 Patent pending
 Features and specifications subject to change
 without prior notice