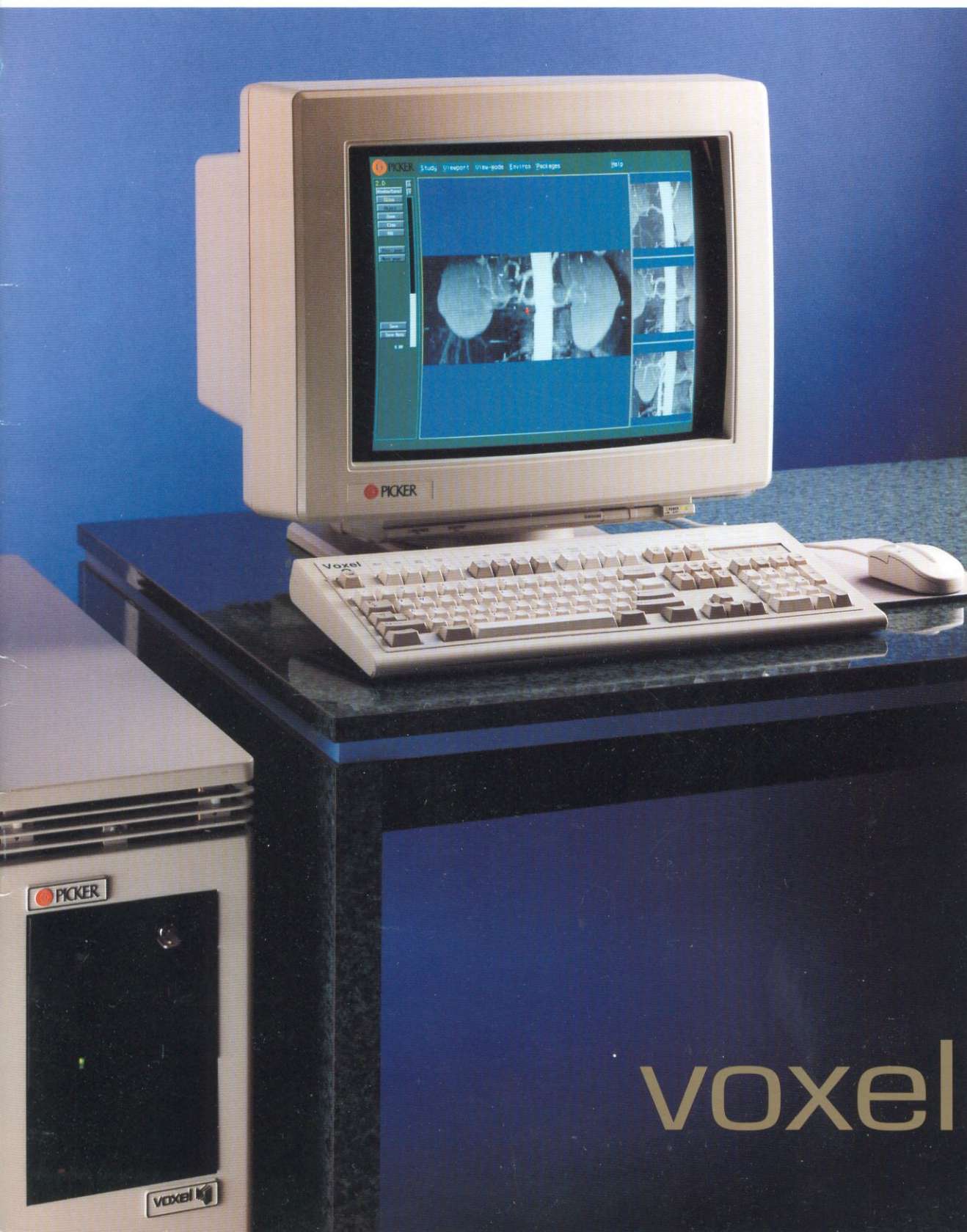




voxel





Voxel Q Feature Summary

- Unsurpassed speed & accuracy: 10 million trilinear interpolations per second (TRIPS)
- Differential diagnostic review of multiple modalities
- Unified operator interface across modalities
- Efficient image access with full push/pull network capability & large on-line storage
- Multiple format image display
- ACR/NEMA DICOM 3.0 multimodality & multivendor networks
- Local & remote image review
- Spiral & dynamic dataset management
- Reimbursable procedures
- 2-D, 3-D, 4-D & MPR viewing
- Automated remote filming increases efficiency & reduces ownership cost
- Advanced image & dataset segmentation tools
- Optional dental presurgical planning package
- CT/MR angiography package options
- Optional integrated multimodality image review & manipulation option

Optimized Image Quality and Accuracy

Voxel Q™ is the medical imaging visualization system of choice for computed tomography (CT) and multimodality image review providing unsurpassed image reformatting, rendering and output clarity. Voxel Q is the only visualization system which delivers 10 million trilinear interpolations per second (TRIPS) to speed three-dimensional (3-D) and volumetric image rendering.

Voxel Q supports many capabilities for viewing critical structures. It provides two, three and four-dimensional image rendering with a multitude of utilities for measurement, segmentation and review. Multiplanar reformatting (MPR), angiography or volume rendered 3-D images are generated without preprocessing or preselection of views. Voxel Q visualization is becoming a requirement in many institutions for the efficient review of large spiral datasets.

A Complete Visualization System

Concurrent and fully integrated image archiving, filming and high-speed 3-D rendering provide the critical efficiency tools necessary to make Voxel Q the choice for advanced or specialty visualization requirements. Large datasets from multiple modalities and multiple vendors can be displayed on the Voxel Q for comparative viewing and differential diagnosis.

Built with industry standard technologies, including networking, modular software and a Sun SPARC computer, Voxel Q easily integrates into a radiology department for many years of increased efficiency and growth.

Speed

Voxel Q's incomparable speed is attributed to the speed of its patented image processor. The processor's voxel memory makes visualization tasks instantly accessible with the touch of a button. All image rendering on the Voxel Q is completely independent of scanner operations.

Simplicity

Voxel Q capabilities are easily accessible through an intuitive, menu-driven interface with features and functions being selected quickly by using the mouse or keyboard. User prompts and operation status updates are also incorporated into the display interface. When a menu item is selected, a brief description of the corresponding feature appears at the bottom of the screen. In addition, an extensive on-line HELP facility provides more detailed explanations as required.

Efficiency

Voxel Q speed, quality and simplicity provide the basis for significant efficiency increases in radiology departments. Rapid image review, manipulation, multimodality comparison, diagnosis, filming, archiving and documentation can be completed using only one tool – Voxel Q.

Quality

Voxel Q provides exceptional image quality with a 24-bit, full-color image display and the system's trilinear interpolative processing ensures maximum image viewing accuracy.

Voxel Q image rendering is performed at the full spatial density and resolution of the reconstructed CT or MR dataset. Quantitative region of interest and linear measurements can be performed at the discretion of the clinician.

Easy Touch Functions

- Study selection & display
- Display of scan & patient clinical parameters
- 2-D, MPR, oblique MPR or 3-D image review
- Region & volume of interest selection
- Window & level preset values
- Segmented pathology or structure display & removal
- Measurement tool selection
- Generation of axial, sagittal or coronal views
- Image magnification
- Image rotation
- Image viewport selection
- Archive images
- Filming
- Cine
- Control window/level, cine speed & slice selection
- HELP instructions & information
- Remote network image access

Basic Viewing Features

- Window/level
- Slice selection (2-D, MPR & 3-D; object selection for 4-D slices)
- Zoom magnification
- Cine with speed adjustment
- Instant on-line HELP
- Region of interest (ROI)
- Volume of interest (VOI)
- Scan information display
- Data transfer to hardcopy
- Color presentation
- Split-screen presentation
- Annotate

Expanded CT Scanner Capabilities

Voxel Q opens new doors for visualizing CT scan data. It delivers instantaneous MPR, soft tissue viewing techniques and efficient spiral scan visualization designed to optimize the throughput of the radiology department.

Increased Scanner Throughput

Voxel Q operates independently of a CT scanner. Procedures such as 3-D rendering, multiplanar reformatting and angiography are implemented while maintaining maximum scanner throughput.

Direct Voxel Q to Scanner Connections

Voxel Q enables convenient image data transfer. Technologists and physicians can push or pull patient studies as required for diagnostic methods. Patient studies can be transferred directly from Picker CT, MR, R&F and nuclear systems to the Voxel Q. For optimal scanner to Voxel Q throughput, images are transferred via the Picker HYPERLAN™ II network as fast as four seconds per 512 x 512 image.

DICOM 3.0 Compliant

Voxel Q data communications are ACR/NEMA DICOM 3.0 compatible. Patient studies from other modalities and manufacturers supporting the open DICOM 3.0 industry standard can easily be transferred to the Voxel Q for visualization.

CT Spiral and Dynamic Imaging

CT and MR procedures provide the potential for significantly improved diagnostic accuracy. Film presentation of large studies is typically cumbersome and increases time and material costs. Voxel Q offers a quick, efficient method of reviewing the dataset to select specific images for reformatting or filming.

Voxel Q provides the efficiency and diagnostic accuracy required to obtain maximum clinical benefits from advanced CT spiral and fast MR techniques. Voxel Q delivers fully interactive visualization of spiral CT and dynamic patient studies. Its 10 million TRIP processing power allows the largest datasets to be efficiently reviewed. Dynamic flow studies, angiographic and fast MR imaging techniques are supported with robust cine capability, interactive window/level, volume of interest selection and interpolated zoom capabilities.

Primary Diagnostic Review

Voxel Q's capabilities for complete off-line viewing, analysis and filming of original 2-D slices, permit more patients to be scanned per day. With Voxel Q, up to 48 slices can be viewed simultaneously, window and level can be adjusted, and displayed images may be enlarged for a closer examination of a selected area of interest. Complete studies can be viewed interactively or in a cine loop.

Multiplanar Reformatting (MPR)

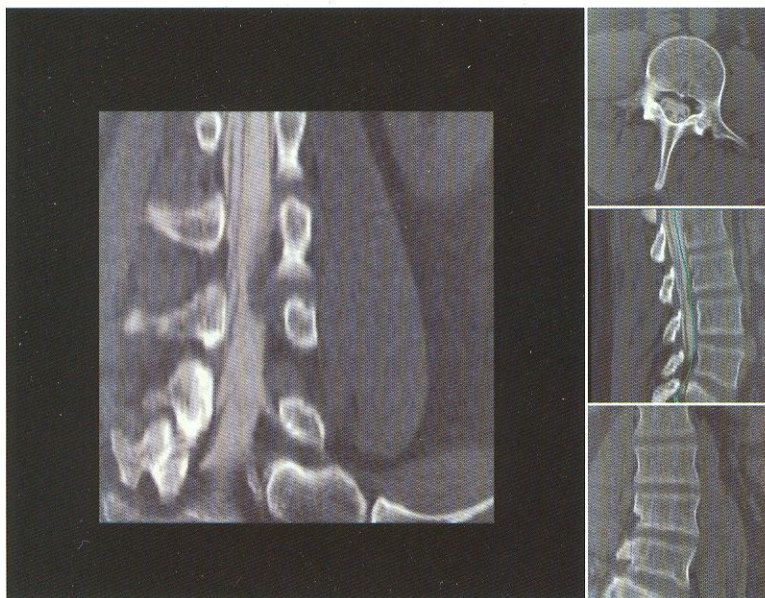
The Voxel Q MPR package instantly reformats 2-D images for viewing along axial, sagittal, coronal, arbitrary oblique or curved planes. Throughout MPR analysis, reference images displayed in side or reference viewports show the exact position of the active viewport image relative to orthogonal planes. These side references assist in identifying the exact position of pathology. Options are available for manually or automatically looping through images along x, y and z-planes.

Support for hardcopy devices

- Point & click selection of output devices
- On-screen, on-line status reporting
- Filming occurs in the background
- Single key manual filming
- Batch filming
- Remote filming
- TIFF format output
- Slide format support
- Color support

MPR Features

- Instant image reformations
- Cine through images along x, y and z-planes
- Rotation at selected angles in side viewports
- Display views along user-specified curved planes such as the spinal cord
- Interactive adjustment of plane orientation & generation of new views in realtime
- Instantly reformat CT or MR data into any plane without rescanning the patient



Key 3-D Features

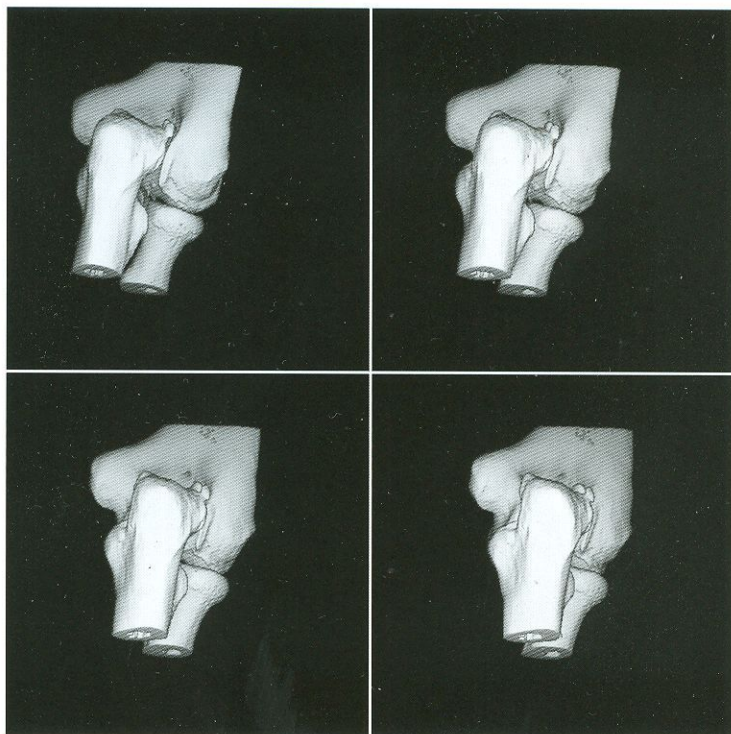
- Automatic identification of the center of a 3-D image volume
- 360 degree rotation of images
- Interactive generation & manipulation of image data
- Rectangular volume cuts in x, y and z-planes
- Transparency of a specified tissue type
- Use of all study data
- Slicing or measuring an image from any direction along multiple planes
- Continuous/fractional zoom
- Viewing segmented or tagged structures
- Display of 3-D CT and MR images
- Support for 3-D visualization of time varying structures (4-D)

Three-Dimensional (3-D) Viewing

Voxel Q interactively generates 3-D images using full resolution scan data. Lengthy background processing of contour files or other preprocessing steps are unnecessary.

A 3-D image can be rotated to any angle. This allows a physician to conduct surgical or treatment planning interactively on the computer screen instead of in the operating room. Three-dimensional images offer substantial advantages in analyzing facial deformities, fractures and vasculature disease. The technique has other applications in neurosurgery and orthopaedics, specifically in the pelvis, spine and joint fractures. It has proven value in:

- Planning for reconstructive surgery
- Herniated disc cases
- Post-myelogram studies
- Facial fractures, trauma & bony tumor cases
- Spinal tumors such as neurofibromas



Clinical Viability

In complex cases such as acetabular or sacroiliac joint fractures, Voxel Q can fully expose the extent of injury within minutes. Voxel Q MPR and 3-D capabilities facilitate more accurate preoperative planning, displaying the precise size, contour and orientation of complicated fractures. Detection of pelvic fractures and intra-articular bone fragments, which may be inconclusive on plain radiographs, can be immediately displayed for diagnosis and subsequent management with CT or MR data.

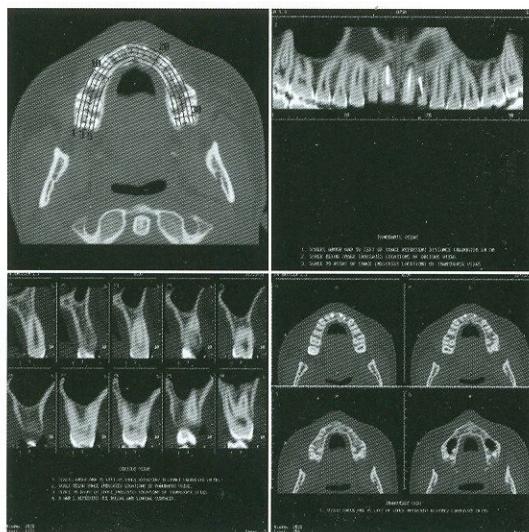
Voxel Q offers a complete package for conducting precise anatomical measurements. For example, although a plain radiographic diagnosis can be made in the case of a tibial plateau defect, Voxel Q offers the means for rapidly and accurately analyzing the fracture. The application of Voxel Q measurement tools can determine the need and extent for surgical intervention.

Dental Software Package

Preoperative Planning of Oral Maxillofacial & Dental Implant Procedures

The creation of films for dental implant and maxillofacial procedures is automated using the dental software package on the Voxel Q. A complete set of reformatted views is automatically generated based on a curve drawn along the center of the mandible or maxilla. Panoramic, cross-sectional oblique and axial views are rendered according to user-defined parameters. Three-dimensional views permit accurate depth measurements and the localization of mandibular nerves and maxillary sinuses. All views include reference rulers for accurate measurement of filmed or displayed images.

Voxel Q dental software allows accurate visualization of mucosal or alveolar ridge defects, as well as mandible and maxilla abnormalities, which may be inconclusive in standard CT or X-ray examinations.



Dental Software Package Applications

- Diagnosis of disease within the head & neck region
- Highly accurate bone assessment for dental implants, bone grafting or plate forming & fitting
- Evaluation of buccal & lingual cortical bone and incisive & interior alveolar canal defects
- Accurate measurements of bone loss & fracture for preoperative planning
- Demonstration of oroantral fistula
- Assessment of maxillary & mandibular pathology
- Display of head & neck neoplasms, infectious diseases & osteoradionecrosis

Selected CT MIP Features

- Visualization of vasculature of the brain, vessel lumina, stenosis & lesions, including aneurysms, atheromatous plaque, calcifications & thromboses
- Display of the location & morphology of calcified plaques
- Rapid examination time & lower radiation dose
- Utilization of contrast material to outline vessel lumens

Maximum Intensity Projection (MIP)

The Voxel Q maximum (or minimum) intensity projection (MIP) package furnishes a ray tracing visualization technique that enhances viewing of both CT and MR data. The intensity of each ray as it passes through data is mapped and represented by pixel shades on a 2-D display projection. Patient data is mapped at an operator selected angle.

Voxel Q provides users with two modes for mapping tissue types. Using the light angiography MIP mode to view CT data, Voxel Q presents the least dense tissues as the brightest or maximum intensity projections on the display. Using the dark angiography MIP mode, the Voxel Q display maps tissues to permit the least dense tissues to be shown as the darkest elements on the screen.

MIP projections can be constructed from any viewing angle. Multiple 2-D MIP slices can also be displayed sequentially. Voxel Q cine loops permit rapid viewing of vessel architecture according to a selected viewing angle.

CT Applications

The visualization of CT data within the Voxel Q MIP package can provide time and cost savings alternatives to conventional angiography. MIP permits visualization



of contrast-filled vessels for evaluation relative to the density of adjacent structures. ROIs and several viewing angles can be chosen to demonstrate anatomic features eliminating the need to rescan the patient.

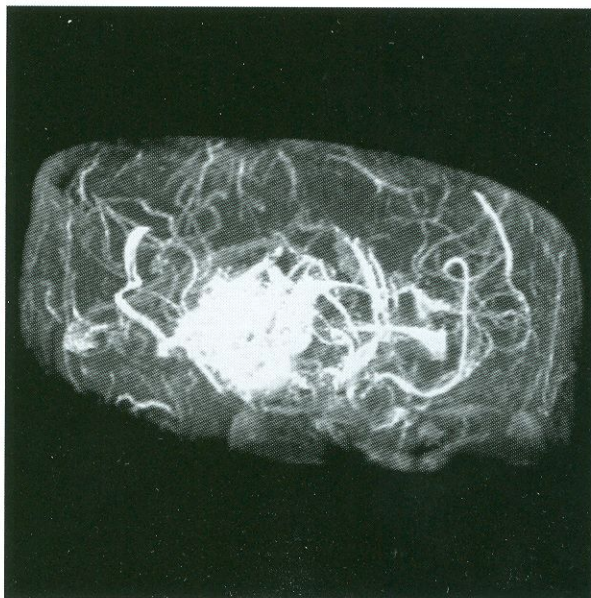
MIP complements shaded surface display (SSD) visualization techniques. While SSD provides 3-D rendering, MIP permits the study of overlapping vessels and identification of vascular anatomy within solid organs such as the kidneys or liver. Since contrast material is utilized to outline a vessel lumen, it can be easily distinguished from calcified plaque or bone. Vascular abnormalities which have a tendency to be hidden within other structures, such as carotid and renal arteries, can also be viewed.

MR Applications

As in the case of CTA MIP, MR MIP is a noninvasive alternative to conventional angiography. Of the three Voxel Q packages, MIP is particularly advantageous in the display of MR-acquired data. Due to MR acquisition methods, segmentation is not always required. MR acquisition phase maps, which display flow in the anterior-posterior (AP), right-left (RL) and superior-inferior (SI) paths are often visualized with the MIP technique.

Selected MR MIP Features

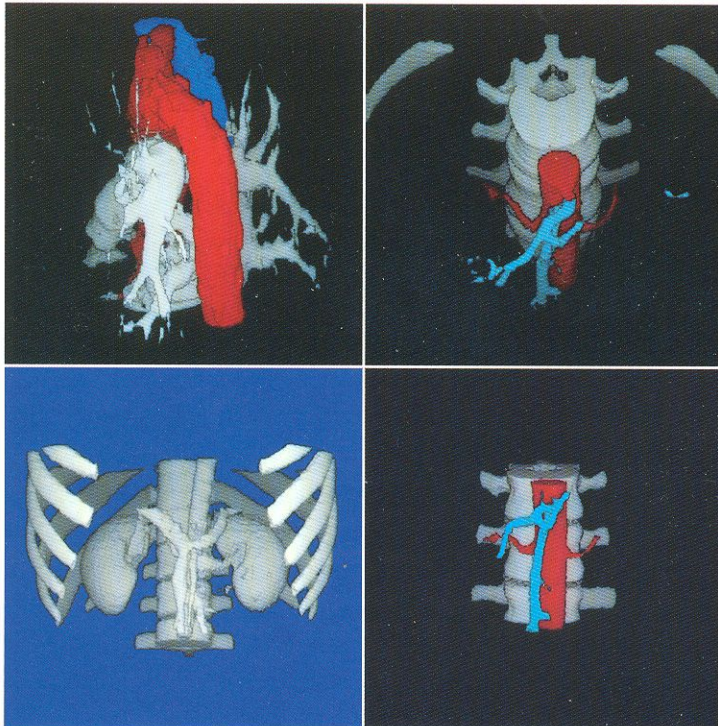
- Review extracranial & intracranial vessels
- Determination of compromised blood flow & the severity & etiology of the flow reduction
- Differentiation between clot & flow-related areas of signal loss
- Blood flow direction and velocity
- Morphological & physiological viewing
- Visualization of venography, abdominal vessels, intracranial dural sinuses & neurovascular imaging of the intracranial circulation & extracranial carotid vasculature



Shaded Surface Display

Using the Voxel Q shaded surface display (SSD) technique, the entire surface area of a vessel or cluster of vessels can be viewed in 3-D. SSD begins with the identification of a CT and/or MR tissue density. Threshold selection, based on the anatomical area of interest, enables the creation of a 3-D surface.

Vessels are viewed along with other structures with similar thresholds, providing an effective means for studying the relationship between tissue types. Tissues may be disarticulated and rotated about any user-selected axis in real time, permitting a variety of views. SSD, like MIP, allows sets of images, or views, to be obtained in any projection and then displayed in sequential order in a cine loop.



CT Applications

The Voxel Q SSD package is a critical tool for visualization of vascular surfaces rendered from CT data. The SSD package provides methods for segmenting contrast-filled vessels and high attenuation structures such as bone, from other structures. Overlying structures or tissues can be removed to aid clear 3-D surface visualization of pathology. Detailed investigation of similar tissue types is easily accomplished.

MR Applications

The Voxel Q SSD package provides extremely efficient viewing of vasculature rendered from MR data. Clear vasculature visualization is often obtained without tissue segmentation. The SSD rendering is useful for examining vessels. Flow dynamics and peristaltic actions can be viewed in cine loops at user selected angles.

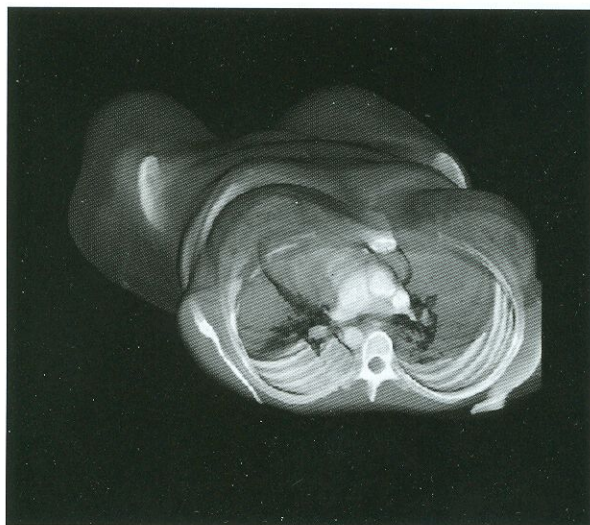
InnerView™

Concurrent Soft Tissue and Bone Visualization

Only the Voxel Q InnerView™ package permits both CT and MR image data shading with degrees of translucency to allow vasculature and vital organs to be seen through other tissue types. The unique InnerView package furnishes tools for adjusting the translucency of various soft tissues, vessels and bone based on their relative densities. InnerView provides an extremely flexible tool for studying complex soft tissue or bony structures. InnerView is particularly useful in precisely locating aortic dissections, aiding in the identification of true and false vessel lumens. Data can be rapidly rotated about any axis, eliminating the need to rescan and reinject patients.

Selected Features

- View bone along with vasculature
- Over 20 InnerView tissue type presets
- Add & subtract density values to interactively adjust tissue types for optimal viewing
- Eliminate overlapped vasculature ambiguities
- Clearly visualize all anatomy
- Visualize pathology for both MR & CT data with clear anatomical references



Contour Creation Tools

- Isodensity
- Freehand
- Rubberband
- Edit
- Copy-to-slice range

Region Creation Tools

- Full region
- Manual paint
- Place seed & grow region
- Grow volume
- Previous slice load
- Next slice load
- Grow slice
- Place barrier

Basic Measurement Tools

- Area
- Distance
- Min/max, mean & standard deviation
- Histogram
- Density profile
- Volume
- Angle
- CT pixel Hounsfield value

Segmentation

The Voxel Q segmentation package provides a real-time, precise method for separating the finest of critical structures for 3-D viewing. Manual and automated tools permit the assignment of up to 15 user-selected tissue types. Voxel Q's segmentation techniques allow the selection of specific structure, tissue, organ and pathology for viewing.

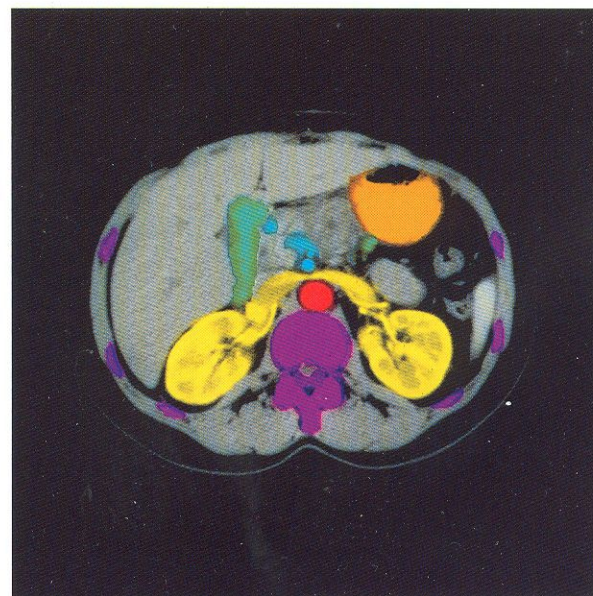
Voxel Q provides two segmentation packages (contour-based and region-based) offering a range of tools for segmentation of anatomy. Options common to both packages include naming and assigning colors to contour lines, help and automatic save-to-disk.

Contour-Based Segmentation

The contour-based package consists of a set of tools for drawing and maintaining groups of contours used in segmenting image data. All available tools are displayed within a dedicated menu. Segmentation is based on user-defined contours on individual slices.

Region-Based Segmentation

Voxel Q's range of region-based techniques provides the optimal method of segmentation of well-defined tissue types. Efficient segmentation of spatially connected structures is ensured by selecting tissues according to a range of Hounsfield values.

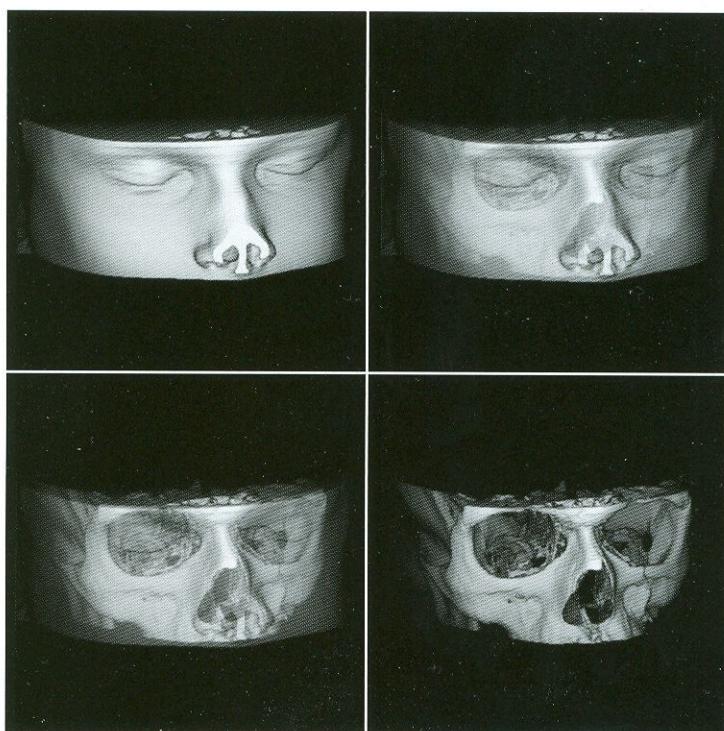
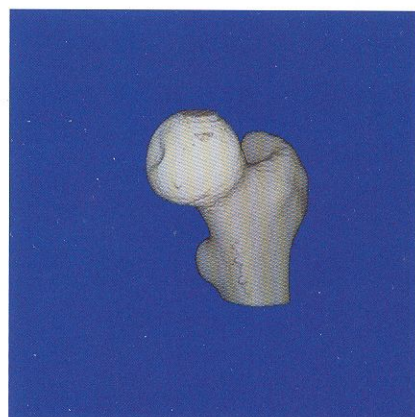
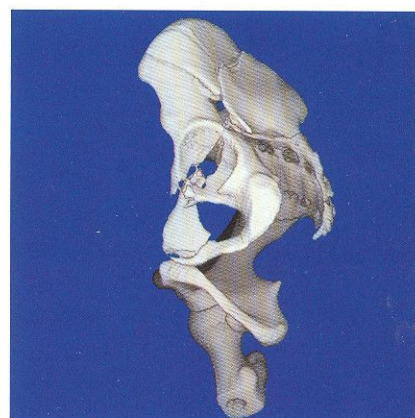
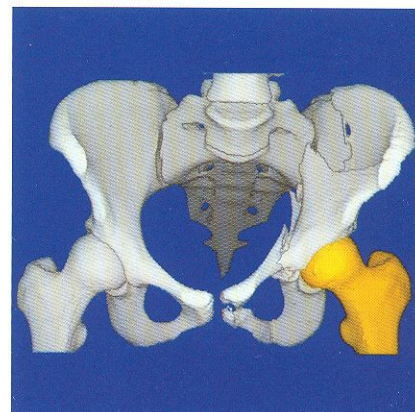


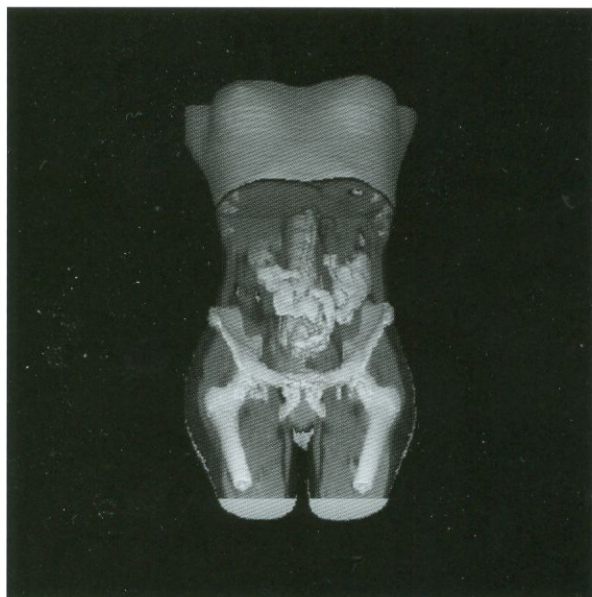
Disarticulation/Surgical Planning

With Voxel Q, bones, tumors and intra-articular bone fragments can be pulled away from other structures and isolated for display. For example, a femur can be disarticulated to study an underlying acetabular fracture for presurgical planning. Voxel Q permits the reorientation of 3-D disarticulated objects about any axis and center of rotation. Using multiple viewports, a number of disarticulated objects may be shown, such as left and right sides of the pelvis for side by side comparative views.

Tissue Transparency

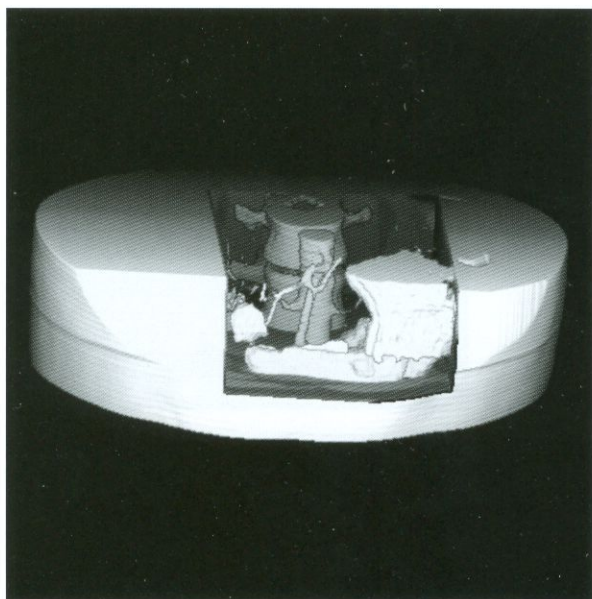
Transparency is a superior method of 3-D visualization for planning of many surgical and invasive techniques. Transparency may be applied to an anatomical region as seen on the display or according to user-selected menu preferences. Voxel Q assigns 256 levels of transparency to a tissue overlay, such as skin. Transparency levels can be adjusted interactively in real time. The object may also be rotated; and brightness, contrast and gradient can be adjusted.





3-D Slice Plane Mapping

Voxel Q permits the selection of a 2-D plane with any 3-D image volume. Interactively selected by the user, the plane location serves as a transparent wall within an image volume. The specification of tissues which will be visible in front of and behind the clear 2-D plane, is user-selected using anatomical window/level presets. The result is a slice plane mapped image volume that effectively shows the relationship between tissues such as skin, soft tissues and bone. Colors can be assigned to a tissue type or window/level map in whole or in part. Once segmented, the user may further adjust window/level brightness, gradient and contrast.



3-D Cube Cuts

The Voxel Q cube cut function permits immediate positioning of x, y and z-planes for the instantaneous removal of a specified cube of data from a 3-D image. Image volumes can be sliced to any width, height or depth. All tissue types included within the user-selected parameters can be removed. A toggle switch allows users to display the surface of the cube cut data according to user-selected window/level. Interactive adjustment of the x, y and z-plane intersection allows accurate visualization and measurement of pathology relative to 3-D rendered structures.

Voxel Q Color Visualization

Voxel Q color visualization can aid in the interpretation of numerous special procedures, including oncology treatment verification, cardiac flow maps, surgical planning and angiography. Voxel Q color maps are particularly beneficial in the differentiation of structures for disarticulation and slice plane mapping purposes.

Multiple Image Viewport Display

The Voxel Q screen is divided into viewports which display independent or related images simultaneously. Up to 48 images from CT and MR studies can be examined concurrently on the same screen.

Multimodality Review

Acquired CT, MR, SPECT or PET data which is transferred to the Voxel Q can be displayed side by side. Datasets may also be linked and displayed in a single viewport. Voxel Q provides the capability of registering multimodality datasets for linked visualization of images.

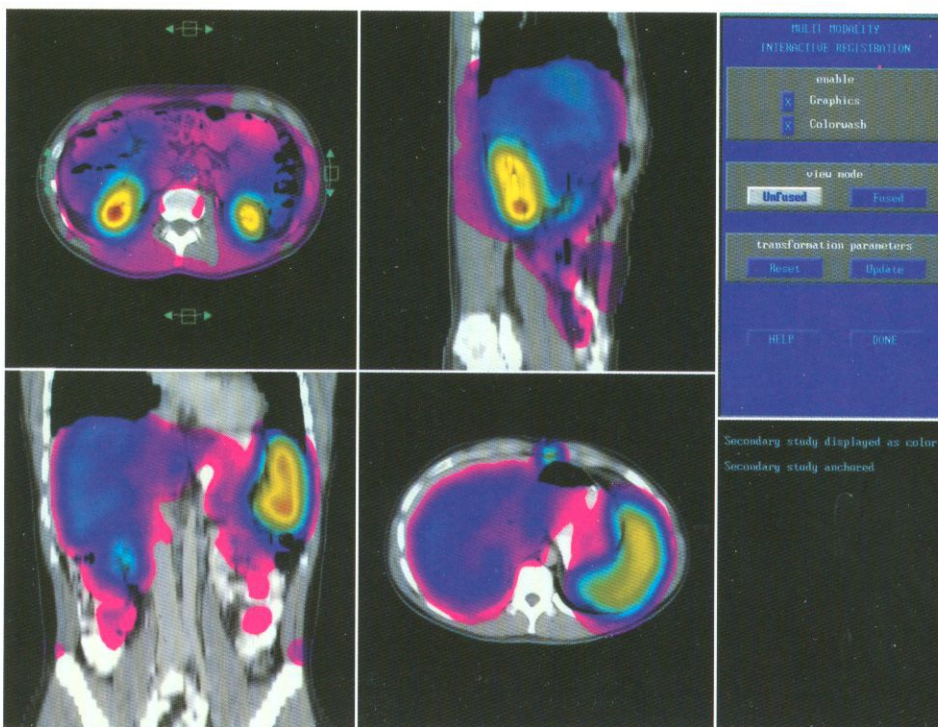
Voxel Q provides color transparency for superposition of registered datasets. Accurate measurements can be made based on CT geometrically correct data while visualizing pathology shown in a nuclear or MR image.

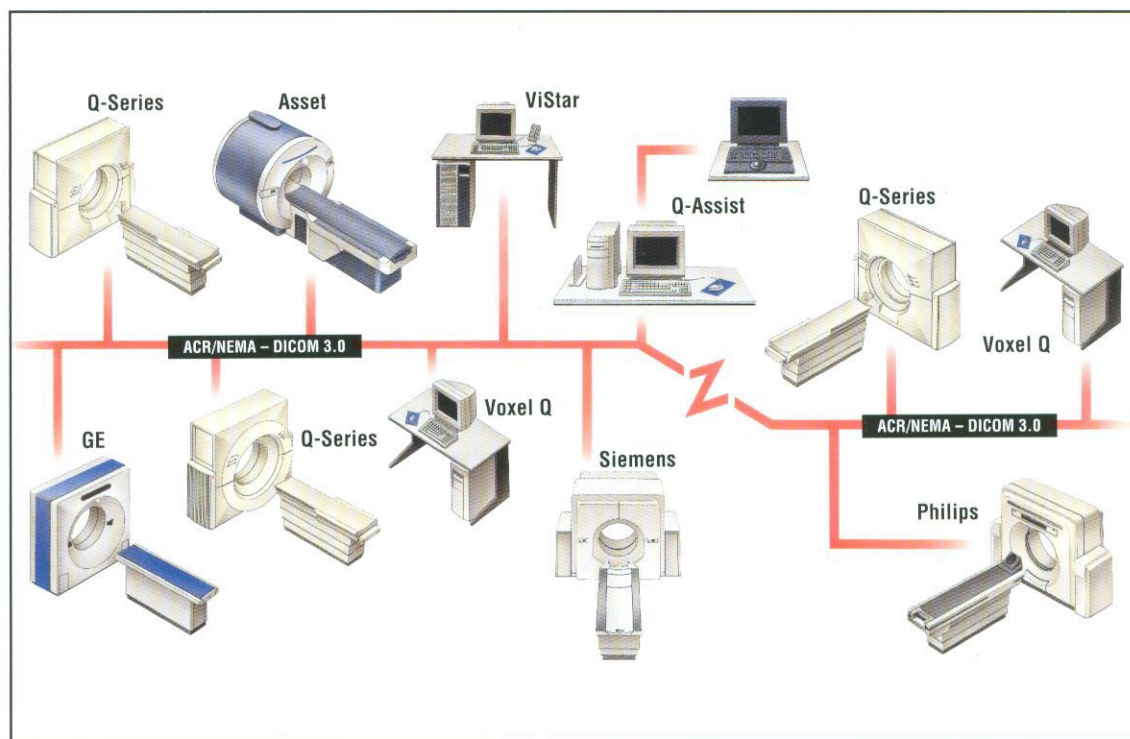
Basic Color Functions

- Cardiac flow
- Contour & region-based segmentation
- Hot body scale heat map
- True hue, saturation & value color mapping
- Negative monochrome or reverse video mapping
- Rainbow (quasi-spectral) map
- Monotonic spiral scale
- Multimodality superposition
- 3-D surface presentation
- Region/volume of interest identification

Multimodality Features

- Anatomic/physiologic correlation
- Planar measurements
- Surgical planning
- Therapy planning
- Multimodality z-axis linked review
- Quantitative tumor/pathology analysis





Efficiency Building Networks

The Voxel Q networks to a variety of devices to permit quick, efficient resource sharing, and to automate many radiology department diagnostic visualization tasks. Networked to Picker CT or other manufacturers' scanners, Voxel Q can conveniently access datasets resident on other devices. The digital integration of the Voxel Q with other devices eliminates the time needed to travel to the scanner room manually carrying or packaging archive tapes to send to other departments, buildings or cities. Care givers can access patient studies wherever a network travels, allowing for rapid remote diagnosis.

Picker MR, Nuclear and X-ray

The Voxel Q connects over Ethernet to Picker MR, nuclear and R&F systems. Fully integrating these modalities at a single review station allows efficient diagnosis, filming and archiving. The Voxel Q unified operator interface, network connectivity speed and ease of use minimize training requirements for multiple users while optimizing multimodality diagnostic review capabilities.

ACR/NEMA DICOM 3.0 Support for Open Communications

... today

Voxel Q supports Ethernet TCP/IP-based network connection to all third-party devices which are compliant with DICOM 3.0 standard as specified by the American College of Radiology and National Electrical Manufacturers Association (ACR/NEMA).

...and tomorrow

Picker has been an industry leader in the integration of the DICOM 3.0 open-network standards and a participant on the ACR/NEMA standards committees since its inception. Based on the ACR/NEMA DICOM standards, Voxel Q will be ready to address technologies of tomorrow such as Integrated Services Digital Network (ISDN) and Asynchronous Transfer Mode (ATM). A full public domain DICOM 3.0 compliance statement can be made available at no charge for Picker Voxel Q users.

Picker Q-series CT Scanner Systems

For optimal throughput to and/or from Picker Q-series scanners, Voxel Q is connected via Picker HYPERLAN II, an efficient Ethernet-compatible standards-based network. HYPERLAN II provides such advanced features as high-speed image transfer, full push and/or pull of image datasets, remote filming capability, Q-systems color image support and Q-systems remote image preview capability.

Remote Filming

Voxel Q remote filming is a unique feature of the Picker Q-series scanners. Remote filming allows images to be pushed over the HYPERLAN II network to be filmed at any laser camera digitally connected to a Q-series scanner. Remote filming does not require a multimodality laser camera input. Remote filming provides true laser camera filming redundancy in multiple camera and/or scanner installations.

Remote Preview

Voxel Q and HYPERLAN II give radiologists the ability to view images which are reconstructed on a Q-series scanner within seconds. Using Voxel Q's remote preview capability, images from spiral or other modes of CT scanning can be displayed within six seconds of their availability for viewing on the CT console. It saves time and adds efficiency in trauma CT or stat patient image review. Remote preview is ideal in any diagnostic situation where near real-time review of patient CT data is required. Images can be displayed while a patient is still on the scanner couch and the radiologist is remotely located.

Base System Components

Voxel Q System CPU**Technology Platform**

Sun SPARC host

Operating System

Sun Unix OS

Tower Enclosure Dimensions

Width:	9 inches	(22.86cm)
Depth:	30 inches	(76.2cm)
Height:	29 inches	(73.66cm)

Data Exchange

- Ethernet (TCP/IP) AUI connector
- SCSI Bus, peripheral bus
- S-bus expansion slot

System Memory

32 MBytes

Data Storage Device**1.0 GByte Disk**

- Cable & interface

8mm Tape Drive System

- Cartridge output capacity up to 2.5 GBytes
- Software to read Picker Q-series scanner 8mm archive tapes

Voxel Q Image Processor**MIPS**

1000 MIP, custom bit-slice parallel/pipeline

MIP Ray Traces

10 million trilinear interpolations per second (TRIPS)

Memory

- 64 MBytes standard
- 128 MBytes optional
- High-speed 8-way interleaved

Service and Applications Modem

- For remote diagnostics and software upgrades
- Internal Hayes compatible, 2400 baud

Voxel Q Control Center**Keyboard**

- Full alphanumeric keyboard
- Template overlay
- 12 function keys
- 6 hot keys including automated study archive, deletion, screen layout changes, disk space display & magnetic tape reading
- Mouse & mouse pad

20" Color Display Monitor

- Full-color 24-bit RGB image display
- 1408 x 1024 pixels displayed
- 48 user-selectable independent or related viewports
- 60 Hz, non-interlaced refresh

Remote Digital Filming Module

- Software for transparent filming with a HYPERLAN II Q-series scanner link
- Separate multimodality input not required

Putty/Walnut Computer Desk

- Desk Dimensions:

Width: 48 inches	(121.9cm)
Depth 30 inches	(76.2cm)
Height 29 inches	(73.7cm)
- Includes matching adjustable chair

Voxel Q Options

Software Options

- Dental planning
- CT/MR angiography
- InnerView
- Multimodality review

Color Printer & Interface Option

- Color dye sublimation printer
- Near-photographic quality color hardcopy
 - 8-1/2 inches x 11 inches (21.6cm x 27.9cm)
 - or 8-1/2 inches x 14 inches (21.6cm x 35.6cm)
- Continuous-tone printing with up to 256 levels of gray scale
- Up to 16.7 million colors

Remote Slave Monitor Option

- Full image viewing capabilities
- 20-inch full color 24-bit RGB monitor
- Adjustable brightness
- Maximum distance from Voxel Q control center: 50 feet (15.24m), without amplifiers

Data Storage Options**3.0 GByte Disk System****5.0 GByte Disk System**

- Formatted hard disk system
- Housed in the CPU tower enclosure
- Cable & interface

9-track Magnetic Tape System

- Autoloading of all standard tape sizes
- Reads densities of 800/1600/3200/6250 bytes per inch (bpi)
- Tape drive dimensions:

Width:	19 inches (48.3cm)
Depth:	26 inches (66cm)
Height:	11 inches (27.9cm)
- Includes table:

Width:	24 inches (61cm)
Depth:	29 inches (73.7cm)
Height:	30 inches (76.2cm)
- Software to read archive tapes from Picker 1200™ CT scanners (SS04 and Level II software) and Picker MR devices

5-1/4" Optical Disk Archiver

- 5-1/4 inch WORM optical disk drive
- Interface cables
- One media platter
- Housed in CPU tower enclosure
- 350 MByte capacity per media side

Voxel Q Storage Media Image Capacity

Image capacity from MBytes of storage may be calculated approximately as follows:

$$\begin{aligned}
 \text{[Total MBytes of storage]} = & \\
 & \text{[# Images 256 x 256] x 1/7} \quad + \\
 & \text{[# Images 512 x 512] x 5/9} \quad + \\
 & \text{[# Images 1024 x 1024] x 10/9} \quad + \\
 & \text{[160 MByte of System Volume]}
 \end{aligned}$$

Network/Scanner Interface Options

- HYPERLAN II
- ACR/NEMA DICOM 3.0 (Voxel Q Version 3.1)
- Entry/MTE Ethernet converter
- MTE 1200 Ethernet converter
- Nuclear Interfile Data Link*
- Third-party direct Ethernet connection**

* Product supported by promotional warranty.

** Product order to receipt time dependent on network configuration.

Third Party Tape Reader Option

- Reads 9-track tapes from major CT and MR scanner systems from vendors including GE, Elscint, Hitachi, Imatron, Philips, Siemens, Technicare Deltascan & Toshiba
- Scanner software and model must be specified at the time of order

**One year warranty on the Voxel Q System
and associated optional hardware**

Site Requirements

- Dedicated/private telephone line (direct-dial, analog type) prior to system installation
- All Ethernet and/or filming cables required are run to the Voxel Q system tower enclosure at the time of installation
- The coordination of fiber optic cable installation (if necessary) with Picker-recommended fiber optic contractor
- Placement of the Voxel Q outside of the range of magnetic fields which may affect image quality

Electrical

- Standard 120 VAC (U.S.A., Canada and Puerto Rico or other incoming international local power)*15-amp dedicated circuit (standard 3-prong plug) power
- 50 or 60 Hz

*Isolation transformer and cable package available for international power conversion requirements.

Environment

Ambient Temperature

50 to 80 degrees Fahrenheit (10 to 26.7 degrees Celsius)

Humidity

20 to 80%

Altitude

0 to 10,000 feet (3,048m)

Power Dissipation

	btu/hr.	kW	hp
Host Graphic Processor	2,700	.8	1
Monitor, Keyboard, Mouse	700	.2	.3
Total	3,400	1	1.3

Picker International, Inc.

World Headquarters
595 Miner Road
Cleveland, Ohio 44143
U.S.A.
Tel: 1-216-473-3000
Fax: 1-216-473-2413

Picker International, Ltd.

Kemble House
Kemble Street
London, WC2B 4AJ
England
Tel: 44-71-489-4044
Fax: 44-71-489-4043

Picker International**France**

GEC S. A.
2, rue Henri Bergson
92665 Asnières-Sur-Seine, CEDEX
France
Tel: 33-1-46-13-52-51
Fax: 33-1-46-13-52-56

Picker International GmbH

Robert-Bosch-Strasse 11
6238 Hofheim
Germany
Tel: 49-6122-9140
Fax: 49-6122-8536

Picker International**Canada, Inc.**

7956 Torbram Road
Brampton, Ontario L6T 5A2
Canada
Tel: 1-416-791-1494
Fax: 1-416-791-7297

Picker International, Inc.

Room 1303 - 4
C C Wu Building
302-308 Hennessy Road
G. P.O. Box 15
Wanchai, Hong Kong
Tel: 852-835-5668
Fax: 852-838-4302

**Picker International
Latin America**

110 Merrick Way
Suite 3A
Coral Gables, Florida 33134
U.S.A.
Tel: 1-305-444-9993
Fax: 1-305-445-0545

