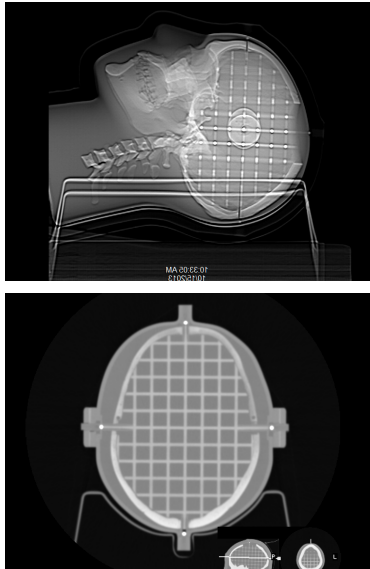


MRI Distortion Phantom for SRS

Model 603A



FOR ASSESSMENT OF IMAGE DISTORTION IN TREATMENT PLANNING SYSTEMS

CIRS Model 603A was designed for assessment of MR image distortion in Stereotactic Radiosurgery Planning. It's also a useful tool for verifying image fusion and deformable image registration algorithms used in various treatment planning systems. The tissue equivalent, anthropomorphic design provides the closest conditions to a clinical imaging scenario. The phantom can be imaged using X-ray, Computed Tomography and Magnetic Resonance. It images well with all MRI sequences tested to date, including T1 weighted, T2 weighted, 3D Time of Flight, MPRAGE and CISS.

The skull is manufactured from a plastic-based bone substitute, and the interstitial and surrounding soft tissues are made from a proprietary signal generating water-based polymer. The entire phantom is encased in a clear plastic shell to protect gel from desiccation. It's supplied with specially designed pads that allow fixation with any stereotactic frame or mounting for end-to-end testing. The phantom is also suitable for frameless SRS QA.

The entire inter-cranial portion of the skull volume is filled with an orthogonal 3D grid of 3mm diameter rods spaced 15 mm apart. Five extended axis-rods intersect at the reference origin of the grid. The end of each extended axis is fitted with

CT/MR markers allowing for accurate positioning with lasers and co-registration of CT and MR image sets.

The phantom includes right and left air voids, 3 mm in diameter by 17 mm long to simulate each ear canal for evaluation of potential distortions commonly found in clinical settings.

For users interested in image fusion studies, the phantom can be purchased as a kit to include a serial-number specific CT DICOM Data set for reference. CIRS can also offer value-added options and services such as phantom specific CMM, attachment of customer specific registration devices and inclusion of special point markers.

Features

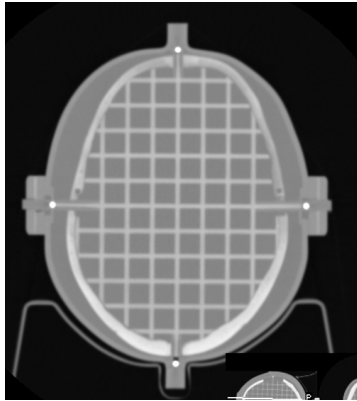
- Provides a realistic anthropomorphic scenario for CT and MR imaging
- Unique inter-cranial 3D grid design allows assessment of spatial distortion
- Special pads enable use with all fixation frames
- CT/MR markers facilitate positioning and image registration
- 335 control points

900 Asbury Ave • Norfolk, Virginia 23513 • USA
Tel: 800.617.1177 • 757.855.2765 • Fax: 757.857.0523

WWW.CIRSINC.COM

CIRS

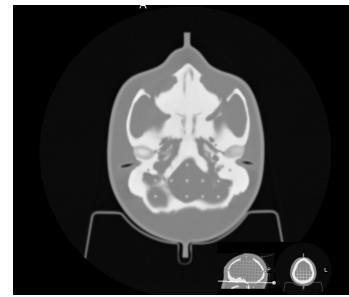
Tissue Simulation & Phantom Technology



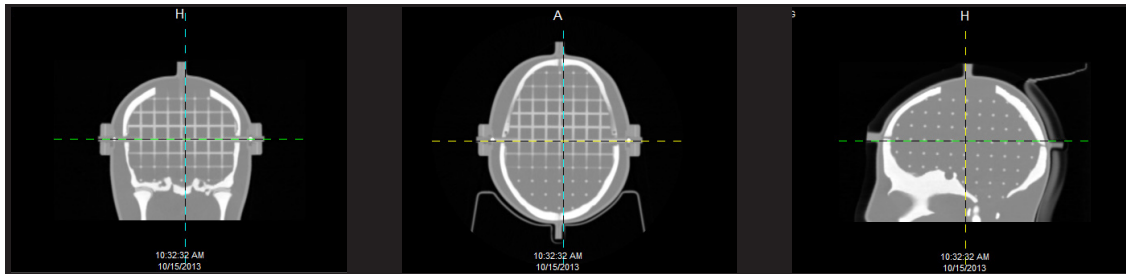
CT



MRI



CT showing ear canal



CT Reconstruction

OVERALL DIMENSIONS	32 cm x 24 cm x 18 cm
WEIGHT	12 lbs (5.5 kg)
MATERIALS	Skull: Plastic-based bone substitute Interstitial/ Soft tissues: Water-base polymer Grid: Reinforced nylon

SOFTWARE OPTIONS

PART NO.	DESCRIPTION
603S-25	Distortion Check software (license for 2 years or 25 successfully analyzed scans, whichever expires first) Phantom Serial Number Required
603S-50	Distortion Check software (license for 2 years or 50 successfully analyzed scans, whichever expires first) Phantom Serial Number Required
603S-100	Distortion Check software (license for 2 years or 100 successfully analyzed scans, whichever expires first) Phantom Serial Number Required
603S-200	Distortion Check software (license for 2 years or 200 successfully analyzed scans, whichever expires first) Phantom Serial Number Required
603S-500	Distortion Check software (license for 2 years or 500 successfully analyzed scans, whichever expires first) Phantom Serial Number Required



Model 603A in Stereotactic Frame (not included)

MODEL 603A INCLUDES

MODEL	QTY	COMPONENT DESCRIPTION
-	1	3D Anthropomorphic Skull Phantom
-	1	ABS Cradle
-	1	Complimentary 90 day license for 5 successful analyzed scans using Distortion Check Software
-	1	Custom Carry Case
-	1	User Guide
-	-	60-Month Warranty
038-20	1	SRS Frame Support Cups (set of 4)

Model 603A-035 Kit includes CT image dataset along with standard 603A phantom components listed above. CT image specifications are listed below:

Image Format: DICOM
Slices: Axial
Slice thickness: 1.25 mm with a 1.25 mm slice spacing
Field of view: 250 mm
Image Matrix: 512 x 512
Number of slices: 190-225. Includes entire grid with external markers down to the cervical spine
Energy: 120 kVp at 150 mA minimum
Other: Ships on USB key with a free DICOM reader (Onis 2.6). If using alternative software to read the images, please notify CIRS of any special requirements for making the data compatible with your software (e.g., checks of the DICOM header file or the DICOM directory when loading the image data set)

