

# *Accreditation Phantom for Uniformity*

Model 551



USER GUIDE

## **CIRS**

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## **OBJECTIVE**

The CIRS Model 551, Accreditation Phantom for Uniformity, aids appropriately trained personnel in identifying the presence of lateral and/or axial streaks, i.e. artifacts, on any ultrasound transducer. Presence of artifacts is an indication of transducer damage and triggers corrective action.

## **PHANTOM DESCRIPTION**

The 551 is a compact, cost-effective solution for implementing a continuous QC program that complies with accreditation requirements. Research has demonstrated that the most common failure in the ultrasound imaging system is the transducer as they are easily damaged by stress, dropping and kinked cables<sup>1</sup>. Accreditation programs now recommend all scanners and all transducers be tested semiannually and must be tested at least annually by performing an image uniformity and artifact survey<sup>2</sup> as part of the annual survey.

The phantom consists of a uniform block of Z-Skin™ elastomer that is elastic enough to conform to any shape transducer. Z-Skin is durable enough to withstand the probe pressure to maintain coupling with all the elements of even the tightest curvilinear arrays.

Paired with the Model 552, Accreditation Phantom for Geometric Accuracy, the Uniformity Phantom offers a complete solution for establishing a quality control program as mandated by the ACR Ultrasound Accreditation Program.

## **SPECIFICATIONS**

<b>DIMENSIONS</b>	Ø 11.2 cm x 7.5 cm
<b>WEIGHT</b>	2.2 lbs (1 kg)
<b>MATERIALS</b>	Z-Skin™ elastomer

Model 551 includes one Accreditation Phantom for Uniformity, user guide and 48-month warranty.

## **USE OF THE PHANTOM**

Uniformity is defined as the ability of the machine to display echoes of the same magnitude and depth with equal brightness on the display. This is a good test to ensure all crystals within the transducer are functioning.

### **Uniformity Testing Procedures**

1. Apply coupling gel to the scanning surface.
2. Position the transducer on the scanning surface and press firmly to ensure that all elements of the transducer array have good acoustic contact with the phantom. This phantom is made of a highly elastic material that will conform to the shape of the transducer.

3. Adjust the instrument settings (gain, TGC, output, etc.) as for a “normal” liver technique. Record these settings for use on subsequent testing.

4. Freeze the image and obtain a hard copy.

5. Observe the general appearance of the phantom. Note if all regions at the same depth are displayed with the same intensity across the image. Figure 2a shows an example image from a good transducer while Figure 2b shows an example from a transducer with dead elements that produce a dark vertical streak in the image.



Figure 2a



Figure 2b

6. Record your observations.

## **CARE AND HANDLING**

Z-skin™ may be stored at standard room temperature conditions without special handling. It will not dry out. It may be cleaned with soap and water after use.

## **REFERENCES**

1. Hangiandreou NJ, Stekel SF, Tradup DJ, Gorny KR, King DM. Four-year experience with a clinical ultrasound quality control program. *Ultrasound Med Biol.* 2011;37(8):1350-7.

2. American College of Radiology. (2013, October 28). *Ultrasound Accreditation Program Requirements*. Retrieved from <http://www.acr.org/~media/ACR/Documents/Accreditation/US/Requirements.pdf>

## WARRANTY

All standard CIRS products and accessories are warranted by CIRS against defects in material and workmanship for a period as specified below. During the warranty period, the manufacturer will repair or, at its option, replace, at no charge, a product containing such defect provided it is returned, transportation prepaid, to the manufacturer. Products repaired in warranty will be returned transportation prepaid.

There are no warranties, expressed or implied, including without limitation any implied warranty of merchantability or fitness, which extend beyond the description on the face hereof. This expressed warranty excludes coverage of, and does not provide relief for, incidental or consequential damages of any kind or nature, including but not limited to loss of use, loss of sales or inconvenience. The exclusive remedy of the purchaser is limited to repair, recalibration, or replacement of the product at manufacturer's option.

This warranty does not apply if the product, as determined by the manufacturer, is defective because of normal wear, accident, misuse, or modification.

### Non-Warranty Service

If repairs or replacement not covered by this warranty are required, a repair estimate will be submitted for approval before proceeding with said repair or replacement.

### Returns

If you are not satisfied with your purchase for any reason, please contact your local distributor prior to returning the product. Visit <https://www.cirsinc.com/distributors/> to find your local distributor. If you purchased your product direct through CIRS, call Customer Service at 800-617-1177, email [rma@cirsinc.com](mailto:rma@cirsinc.com), or fax an RMA request form to 757-857-0523. CIRS staff will attempt to remedy the issue via phone or email as soon as possible. If unable to correct the problem, a return material authorization (RMA) number will be issued. Non-standard or "customized" products may not be returned for refund or exchange unless such product is deemed by CIRS not to comply with documented order specifications. You must return the product to CIRS within 30 calendar days of the issuance of the RMA. All returns should be packed in the original cases and or packaging and must include any accessories, manuals and documentation that shipped with the product. The RMA number must be clearly indicated on the outside of each returned package. CIRS recommends that you use a carrier that offers shipment tracking for all returns and insure the full value of your package so that you are completely protected if the shipment is lost or damaged in transit. If you choose not to use a carrier that offers tracking or insure the product, you will be responsible for any loss or damage to the product during shipping. CIRS will not be responsible for lost or damaged return shipments. Return freight and insurance is to be pre-paid.

### With RMA number, items may be returned to:

CIRS  
Receiving  
900 Asbury Ave,  
Norfolk, Virginia, 23513 USA

Product	Warranty Period
Model 551- Accreditation Phantom for Uniformity	48 Months

