

Beam Profile & Slice Thickness Phantom

Performance measures:

- Uniformity
- Tissue Harmonic Imaging Compatibility
- Beam Profile/ Focal Zone/ Lateral Response Width



Measure Beam Profile and Slice Thickness

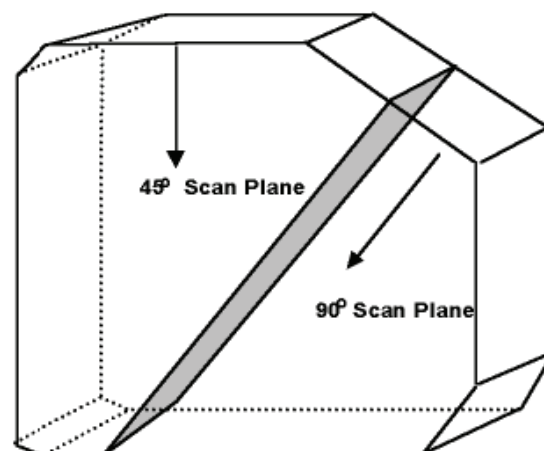
The Model ATS 538NH can measure the beam profile and slice thickness of ultrasound imaging systems by evaluating the appearance of a thin plane of echogenic material against an anechoic background.

Scanning the scattering plane from one surface, perpendicular to the thin plane, obtains an image of the beam profile at varying depths. This image contains a great deal of information about the sound beam as it propagates through the tissue-mimicking media such as the focal length, focal zone, beam width, side and grating lobes, and far-field beam divergence. The near field region of the beam can be easily distinguished from the far field as varying degrees of brightness close to the scan surface versus the homogeneous amplitude further down.

Scanning the scattering plane from a second surface, 45 degrees from the scattering plane, allows users to evaluate the slice thickness of an imaging system at varying depths. Slice thickness or elevational resolution, the third component of spatial resolution, displays reflections produced by structures in front of or behind the beam's main axis. The effect of changes in the slice

thickness is identical to those seen with axial and lateral resolution. The thinner the slice thickness, the better the resolution: as the slice thickness increases, the degree of spatial resolution decreases.

Target Schematic



Specifications

Dimensions	25 cm x 22 x 7 cm (10" x 9" x 3")
Weight	11 lbs (5.1 kg)
Housing Material	PVC
Scan Surfaces	3
Tissue-Mimicking Material	Urethane Rubber
Urethane Properties	Freezing Point: < -40° C Melting Point: Above 100° C Speed of Sound: 1450 m/s at 23° Attenuation: 0.5 dB/cm/MHz (measured at 3.5 MHz)
Targets	Scattering plane oriented at 45° to the scan planes used to measure slice thickness, and 90° to the beam profile scan plane Size: 26 x 7 cm Depth: 0 - 22 cm

Items Included with Model ATS 538NH

Quantity	Description
1	Beam Profile and Slice Thickness Phantom
1	User Guide
	Certificate of Compliance