



## Sensitivity

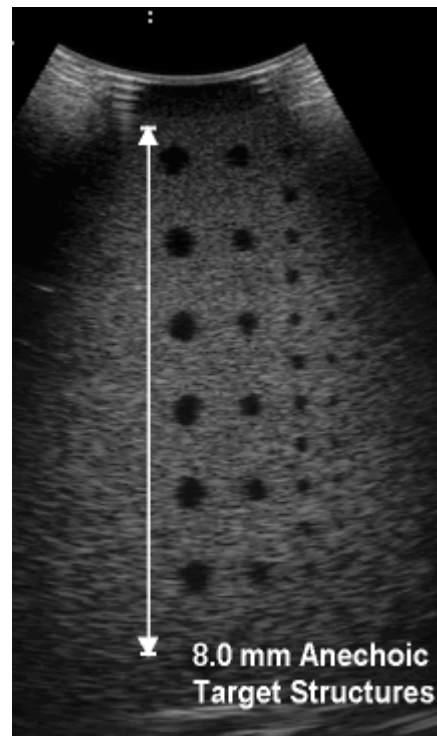
### Description and Reason For Testing

The ability of an imaging system to detect and display weak echoes from small objects located at specified depths (penetration) is referred to as sensitivity. Clinically, weak reflecting echoes are commonly produced from internal structures of organs. Definition of these structures can be extremely important in the interpretation of the ultrasound findings. Sensitivity can be affected by the pulser/receiver section of the system, the degree of focusing of the transducer, attenuation of the medium, depth and shape (geometry) of the reflecting object, and electromagnetic interference from the local surroundings. A system's maximum depth is limited by output power, TGC, gain, transducer frequency, focal depth, number of scan lines and electrical noise.

### Testing Procedure

1. Position the transducer over the 8 mm group of anechoic targets.
2. Freeze image and obtain a hard copy.
3. Examine the image to determine the last or deepest target structure displayed. Using the electronic calipers or the timing markers measure the depth of this target.
4. This test should also be performed with output levels set at the highest and lowest settings. This enables any changes in output to be more easily detected.

5. Document the depth measurement on the quality assurance record.



### Results

The system's depth of penetration should remain consistent from week to week when using the same instrument settings and ATS Laboratories' phantom. Compare the test results obtained from the baseline records. If the current image demonstrates changes in the system's ability to resolve these targets, corrective action should be considered.