Who Needs It ?

Sonographers Need the Nickel

A Sonographer can use the Nickel to confirm that the probe and the system are working properly before an ultrasound study. The Nickel is also a powerful training tool for new sonographers in your department who may be unfamiliar with how a particular feature on a system works. The Nickel can also be used to check the probe right away in case it was dropped or perhaps left in a disinfecting agent for to long.

Biomeds Need the Nickel

The Nickel is an integral part of any in-house ultrasound quality assurance program. The Nickel objectively demonstrates both probe and system performance. The Nickel can also test all the major modalities of the ultrasound system including; B-mode, Color Flow and Pulsed Wave (PW) Doppler.

Instructors Need the Nickel

Instructors can use the Nickel as a tool to explain macro concepts of ultrasound physics, both imaging and Doppler (including color flow Doppler), ultrasound instrumentation and transducer principles. The Nickel can also demonstrate advanced imaging concepts such as dynamic focusing and spatial compounding

OEMs Need the Nickel

The Nickel provides the OEM Field Service Engineer with a powerful tool to troubleshoot not only their systems and probes, but systems and probes from other OEMs for which they have responsibility (MVS). The Nickel is also a very handy tool for engineers and QA/QC personnel in analyzing design approaches as well as QA/QC inspections.

ISOs Need the Nickel

The Nickel is a key tool for the independent service engineer. Designed to operate on any ultrasound system with virtually any electronic array probe, the Nickel thoroughly tests the basic operating parameters of the system and the probe.

Product Description

The Nickel is an easy to use ultrasound acoustic performance-testing tool for transducers, as well as for various modalities and functions within the systems. The Nickel provides assurance to the operator with instant feedback from the LED (light emitting diode) housed within the on/off switch of the device that, in fact, all of the elements within the array of a probe are transmitting an acceptable acoustic pulse. If a sufficiently strong transmitted acoustic pulse is present, the Nickel receives that pulse from an element thereby turning the LED to a non-red color. The color is frame rate dependent; with a low frame rate it will blink slowly and may appear as an orange or amber color, with a high frame rate the LED may be steady-state green.

The Nickel then processes the pulse, inputting a simulated echo into that same element. This multi-frequency simulated echo is then processed by the ultrasound system and displayed on the monitor within the image field, as shown by example in Photo 1 or in the Doppler trace as shown by example in Photo 2. This displayed input signal provides the user with the assurance that all signals received by the transducer are being processed and displayed. The absence of a detected or displayed signal indicates the need for further testing and possible repairs to either the probe or the system.

If the LED is red when it should be turning a non-red color, it may indicate a dead or weak element within the array. It may also be due to a broken wire in the probe cable, a broken or bent pin in the probe connector, or an electronic component problem within the probe connector. The absence of a signal may also indicate the lack of a transmit signal from the ultrasound system itself, due to a defective transmit channel or the failure of other front-end electronic components.

The Nickel is not designed to be a calibration tool. It is an indicator of the overall functional health of both the probe and the various major electronic segments of the ultrasound system that define the performance of the various modes of operation (e.g., B-Mode, Doppler, Color Flow and M-Mode). The simulated echo signal that is inputted into the transducer from the Nickel also allows the testing of some special functions within any given ultrasound system, for example algorithms used for spatial compounding, second harmonic imaging, various pseudo-color displays and dynamic focusing.

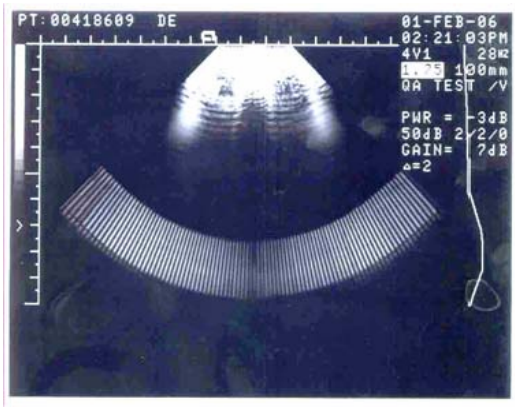

Photo 1

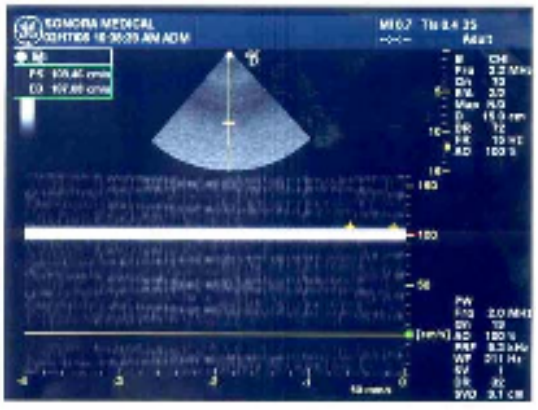

Photo 2