

## MISTRAS Releases Ethernet Based Remote UT Module

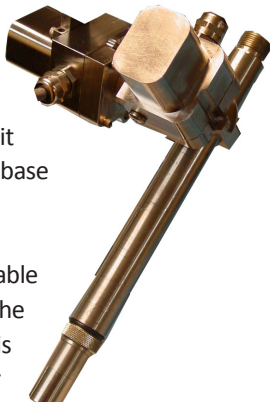
MISTRAS has developed a Remote Ethernet UT Module, that locates the UT system closer to the transducer minimizing interfacing wiring and its inherent EMI noise. Ideal for gantry and large immersion system installations, the Remote Ethernet UT Module is a complete stand alone Ultrasonic System in a 10" x 6" x 3" water resistant enclosure that can be supplied as a single (1) or four (4) channel configuration. The module is powered by 12 volts DC which is also supplied in a small portable water resistant plastic enclosure.

The Ultrasonic Pulsar/Receiver and ADC are based on the designs from the popular Pocket UT™. The Pulsar is a multifunctional spike, square wave and tone burst type Pulsar with a 50 - 400 volt output range. The Ultrasonic receiver has a 12 dB preamplifier at the input that is followed by a programmable gain amplifier to give a 0 - 110 dB gain range. The receiver supports DAC and TCG and is filtered by a 4th order 20 MHz low pass filter. The filtered output goes to a 14 bit 100 MSPS ADC. The ADC output goes to a 1.6 M gate FPGA for digital signal processing and hardware feature extraction based on three separate UT gates.



## Ultrasonic Spotlight: Dual Mini Motorized Manipulator

The Dual Mini Motorized Manipulator provides two high precision, servo driven gimbal axes. The unit can be configured for either gimbal/gimbal or gimbal/swivel operation. All water exposed components are machined from stainless steel or non corrosive brass and precise, repeatable angular motion is assured with a 100:1 anti-backlash, harmonic drive, oil filled gear-head. Home and limit switches are provided to allow hardware base position of the search unit.



The unit proves accurate and repeatable positioning of a transducer to follow the contours of complex components. It is lightweight and has a compact profile for easy mounting to a "Z" motion axis. It rotates at a speed of 90 degrees per second and has single axis motion of up to +/-160 degrees depending on combined axis positions, transducer length, and other specific conditions. The unit can easily retrofit to other immersion systems and can also be a valued addition to systems that employ squirters.

## Mark Carlos Becomes Chairman of ASTM NDT Committee for 2nd Term



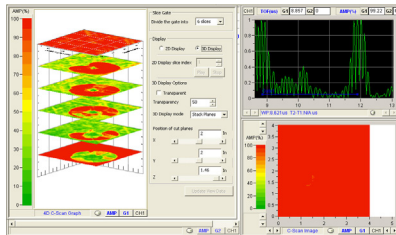
MISTRAS Group, Inc. announces the appointment of Mark Carlos to his second two year term as Chairman of the American Society for Testing and Materials (ASTM), E07 Committee on Non Destructive Testing (NDT), effective January 2012.

As an active and participating ASTM member for over 20 years, Mark has progressed from Chairman of the E07.04, Acoustic Emission Subcommittee (which he still presides over), to Secretary of the Committee, Vice Chairman and now Chairman of the Committee for NDT for his second term.

ASTM International is a worldwide volunteer organization, providing a forum for producers, users, ultimate consumers, and those having an interest to create consensus standards for materials, products, systems and services. **(Continued on back)**

## NEW UTwin Software Enhancements

The UTwin Replay Software now offers Multi Layer Gate with special 3D features. The 3D display has a special rotation and zoom to provide a more detailed view of the image. With a selection of up to 48 layer slices, the user can select a slice range or specific number, and be able to view the multi layers as stack, corner or side planes. Other features include: 2D display with the ability to auto or manually toggle through each slice, and switching between transparent and non-transparent displays.



This feature will display damage growth and orientation through the thickness of the inspected sample.

See future issues of the Main Bang as more features are developed!

## Mark Carlos Becomes Chairman of ASTM for Second Term

*(continued from front)* The E07 Committee on NDT currently has jurisdiction over 175 NDT standards, published in Volume 03.03 Annual Book of ASTM Standards. E07 has 12 technical subcommittees that maintain jurisdiction over these standards. These standards have, and continue to play, a preeminent role in all aspects relating to traditional and emerging NDT methodologies (including thermal and visual), Radiology (X, Gamma and Neutron), Liquid Penetrant, Magnetic Particle, Acoustic Emission, Ultrasonics, Electromagnetics, Leak Testing and Reference Radiological Images.

Mark is the Group Executive Vice President for the Products & Systems Division of MISTRAS Group, Inc., responsible for research and development, engineering and manufacturing.

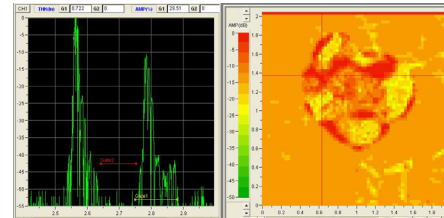
## Upcoming World AE/ NDT Events

- TRB Annual Conference Washington, DC • January 22-26 2012
- NDTMA Conference Las Vegas, NV • February 14-16 2012
- IPEIA 2012 Conference Banff, AB-Canada • Feb 29 - March 2, 2012
- Composites Mfg. 2012 Mesa, AZ • March 13-15, 2012
- ASNT Spring Conference Dallas, TX • March 19 - 23, 2012

## UTwin Features New A-Scan Display

One of the main features of UTwin includes the multiple ways available to present the A-Scan display, specifically the logarithmic display. A log display is a mathematical compression of the digitized input signal from micro volts to saturation voltage with good linearity. Both positive and negative information may be processed over a wide range of UT duty cycles. The UTwin screen print image shows both the A-Scan & C-Scan using the log display (dB). The weaker signals get higher amplification while the stronger signals get very little. Using the UTwin log display gives the user the ability to view the complete dynamic range without the use of a hardware log amplifier.

Log displays are widely used for ultrasonic testing on high attenuation materials which require a high dynamic range of signals on one scope screen without using a high resolution ADC instrument or using multiple scans at changing gains. Applications in ultrasonic testing include composite material evaluation, corrosion mapping with rough surfaces, small flaw detection and some tests with wide range of signal amplitude.



## Annual ATA NDT Forum Wrap Up!

On September 26th through September 29th, MISTRAS exhibited at the 54th Annual ATA Non Destructive Testing (NDT) Forum in Charlotte, NC. The four day forum showcases the current NDT issues and methodologies among equipment designers, technicians, regulatory authorities and airlines.

During the conference, the MISTRAS team presented the Line Scanning Thermography (LST) portable system showing Thermography images of laminate and honeycomb composite structures to attendees. Dr. Obdulia Ley was on hand to speak about LST with a technical paper titled, "Summary of Efforts Assessing Impact Damage of Composite Structures Using Line Scanning Thermography."

There were approximately 100 people in attendance including major airline carriers, major airline manufactures and related testing companies.