DR. HILLGER

Ingenieurbüro

USPC 5000 Health-Monitoring-System for Lamb-Wave Testing

Modular, 8-channel ultrasonic system optimised for the inspection utilising Lamb-waves and Acousto-Ultrasonics
Upgradable for ultrasonic imaging techniques (A-, B-, C-, D- and F- scans) with built-in scanner controller for the use of the MUSE-scanner

Highlights

- 8-channel transmitter
- Arbitrary-generator for special transmitter pulses
- 8 receiving channels
- 64 testing cycles
- 14 or 16 bit ADC
- Extremely high signal-to-noise-ratio (70 dB)
- High pass and low pass hardware filters
- Frequency range: < 1kHz up to 2,5 MHz
- Software ***Hillgus for Windows*** encludes datalogger
- Automatic time of flight and amplitude measurements
- FFT option

Ultrasonic testing using Lamb-Waves: USPC 5000 for research and development

Lamb-waves propagate large areas and therefore offer the possibility of testing large areas of components without time consuming scanning. Therefore, the cost of inspections can be reduced dramatically.
However, each frequency generates symmetric and asymmetric modes; their velocities are frequency-dependent.
The received signals are complex and much more difficult to evaluate than those ones of the classic ultrasonic testing.

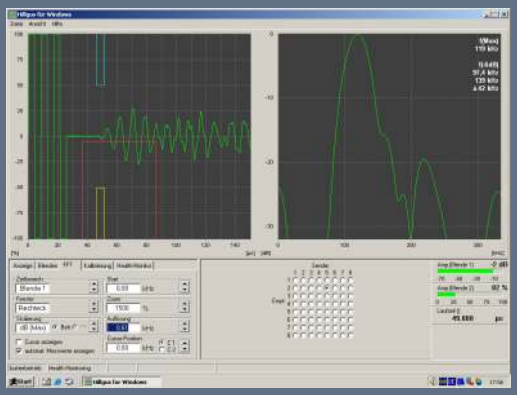
Therefore, much research has to be done. For these applications the USPC 5000 has been developed. This system with 8 transmitters, 8 receiving channels, and 64 testing cycles features high flexibility, high dynamic range, arbitrary transmitter, and easy to handle software *Hillgus for Windows*.

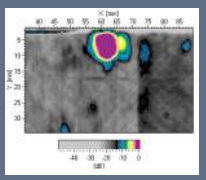
Option: Ultrasonic Imaging

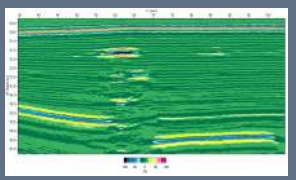
- A-, B-, C-, D-, and F- scans
- ADC 200 Ms/s, 14 bit
- Built-in motor-controler for MUSE-scanner
- Frequency range: 1 kHz up to 20 MHz
- Burst-transmitter for sandwich-components
- Pulse repitition frequency up to 10 kHz
- Option: visualisation of Lamb-waves propagation

The USPC 5000 contains a powerful Windows computer. Therefore the system not only provides high resoloution but also all possibilities of a powerful PC such as evaluation and documentation.

USPC 5000 Applications:







Option imaging:
C- und B- scans provide defect detection (i. E. as a reference for Lamb wave testing or optional visualisation of Lamb wave fields)

Software Hillgus for Windows; simultaneous display of: excitation, transmitter pulse, A-scan, spectrum, amplitudes, time of flight, transmitter/receiver matrix

CFRP-stringer stiffened component (Airbus) with Piezo-actuators and sensors

INGENIEURBÜRO
DR. HILLGER
High-Tech-Ultrasonic-Technique

Wilhelm-Raabe-Weg 13
D-38110 Braunschweig
Germany

Phone: +49 5307 7945
Fax: +49 5307 5734
E-mail: info@Dr-Hillger.de

www.Dr-Hillger.de