

High-End Electronics Platform for Ultrasonic Testing Machines

USIP|xx



The USIP|xx electronics platform for ultrasonic testing machines provides the operating electronics for a wide range of ultrasonic testing systems. It processes the gathered inspection data at very high speeds to offer fast on-line inspection with exceptional probability of detection (POD).

- Designed to meet high-end testing requirements
- Offers up to five times increased productivity
- Can handle up to 768 parallel phased array channels per rack to provide comprehensive phased array operation
- Uses Ethernet-connected modules to ensure high data throughput to communicate with the Control-PC
- Can be used with conventional or phased array transducers including 2D Matrix probes
- Can be easily integrated within a user's individual environment by signal exchange via Interbus
- Modular design facilitates easy maintenance
- Architecture facilitates access to raw data for subsequent evaluation and future upgradeability



USIP|xx Specifications



USIP xx	
Configuration	<ul style="list-style-type: none"> • 64 channels per board • Up to 768 channels in a rack • Up to 8 racks connected together
Pulsers	<ul style="list-style-type: none"> • 25 V to 200 V supply voltage, adjustable in 5 V steps • Negative rectangle • Adjustable width 20 ns to 1000 ns in 5 ns steps • Max. PRF 20 KHz • Adjustable delay 0 – 80 μs in 2.5 ns steps
Receivers	<ul style="list-style-type: none"> • 4 Vpp input voltage • 0.5 - 15 MHz bandwidth (-3 dB) • 80 dB dynamic range (per channel) • Delay 0–80 μs in 5 ns steps
Digitizers	<ul style="list-style-type: none"> • Sampling frequency of 50 MHz • Up-sampling up to 400 MHz • 20 bits amplitude/channel; up to 24 bit for formed beam
Interfaces	<ul style="list-style-type: none"> • External PRF input • 4 x encoders + 2 Index • Up to 8 x 128 TDR, 32GPIO, 3 x Interbus • 3 x light barrier inputs • Gigabit Ethernet to PC
Phased Array features	<ul style="list-style-type: none"> • Focusing, steering and scanning • Aperture size from 1 to 256 elements • Memory sub-cycles (no firing) with water path suppression (Paint Brush) • Pulse echo, Through-transmission, Pitch-catch • Up to 4096 cycles
Data Stream & Evaluation	<ul style="list-style-type: none"> • Up to 8 parallel evaluations per board and per cycle • Up to 8 status A-Scans (512 pts) with echo-max • Data A-Scan with 400 MHz sampling rate (max. 4096 samples) • Raw A-Scan with 50 MHz sampling rate (max. 32.000 samples) • 5 gates including Interface trigger gate, measurement resolution 2,5 ns • Individual gain per gate (Local Gain) • 128 evaluation channels per board • 512 delay law sets per board
Signal processing	<ul style="list-style-type: none"> • Pre-defined and customizable digital filter • Upsampling, downsampling • A-Scan compression



www.ge-mcs.com

GEIT-60017EN (04/13)