

PCUS[®] *pro* Array

Phased Array Ultrasonic Frontend

General

- USB 2.0 High-Speed with a maximum data transfer rate of 40MB/sec
- Cabled PCI Express x1 interface; maximum of 200MB/sec data transfer rate
- Dimensions: 190mm x 190mm x 65mm (L, W, H)
- Near-transducer setup
- Designed for up to 64-element Phased Array transducers
- Phased Array and/or Sampling Phased Array techniques
- Can also be used for multi-channel UT applications

Transmitters

- 64 transmitters
- Transmitter pulse voltage: -50V to -170V, adjustable in 1V increments
- Negative rectangle pulse
- Output impedance: 50Ω
- Pulse delay: 0μs to 40μs, adjustable in 0.25ns increments (16 transmitters aperture)
- Pulse delay: 0μs to 40μs, adjustable in 2.5ns increments (64 transmitters aperture)
- Pulse width: 10ns to 500ns, adjustable in 2.5ns increments
- Pulse repetition frequency: up to 2kHz, depending on recording length, pulse width, sampling rate and transmitter voltage

Receivers

- Maximum of 16 independent receivers
- 4:1 multiplexed input for each channel
- Pulse/Echo mode for Array transducers
- Frequency range: 500kHz to 30MHz (-3dB)
- Receiver filter: two analog band filters per channel (user defined)
- Attenuation/amplification: >100dB, adjustable in 0.1dB increments
- TGC with 80dB dynamic range, adjustable in 0.1dB increments; 256 points, slope ≤40dB/μs, 16 independent TGC curves
- Receiver delay: 0μs to 655μs, adjustable in 2.5ns increments
- Input sensitivity: 100μVss

Signal Path

- Transducer delay: 0 μ s to 655 μ s, in 10ns increments
- Maximum recording length: 65,535 samples per channel
- A/D Converter: 14bit (13bit + sign), maximum of 100MS/sec
- One start gate and four measurement gates
- RF-Data or compressed TD-Data recording
- Rectification: positive-, negative-, or full-wave
- Trigger delay per channel: 0 μ s to 655 μ s, adjustable in 10ns increments

Interface and Connectors

- Array transducer connector: Hypertronics NEBV19/16PFD/THA
- USB 2.0 High-Speed: Bulgin Connector PX0443
- Molex 74150-001 PCI Express connector
- Power consumption: max. 12VDC, max. 48W (30W typical); Bulgin Connector PX0419
- Trigger IN: TTL high or low active, pulse width >100ns, opto-coupled (Lemo 00)
- Trigger OUT: LVTTTL high active, pulse width >2.5 μ s (Lemo 00)

Software

- Digitally signed device driver for Windows[®] XP (SP2 or higher), Windows[®] Vista and Windows[®] 7 (32 bit and 64 bit)
- Managed Windows[®] API (based on .NET 4.0 framework)

System Conformity

The PCUS[®] *pro* Array system meets all relevant requirements of DIN EN 12668, Part 1.

Contact:

Michael Dalichow
Quality Network Inc.
11 Main St
Sparta NJ 07871-1979
Phone: (973) 726-8399
E-mail: md@qnetworld.com