



# Technical specifications

## MULTIX

## M 2 M

Phased Array Technologies

[www.bercli.net](http://www.bercli.net)

Fully parallel architecture with 32, 64, or 128 channels

Additional configurations available on 8-channel-per-board basis

See our complete product range online

### Acquisition

- Hardware acquisition gates; unlimited number of software gates
- Synchronization of gates
- Acquisition trigger on event (e.g. threshold, detected echo)
- Acquisition on user specified trigger (e.g. time, mechanical trigger)
- Acquisition of raw signals and/or summed data
- Choice of data acquired (e.g. RF, peaks)
- Real-time image display during acquisition
- User definable inspection configuration
- Public file format for parameters (XML) and data (binary)
- Maximum data flow > 30 MB/s.
- Maximum acquisition rate: 20 kHz

### Phased-array

- Customized focusing, electronic scanning, and sectorial scanning
- Inspection mode: pulse echo or transmit receive modes (same probe or two probes)
- Dynamic Depth Focusing with electronic selection of elements
- Fast multiplexing of focal laws during electronic scanning via storage of focal laws on 32Mo hardware RAM
- Imaging adapted to focusing
- Corrected images (e.g. linear, sectorial BScan)

### Pulsers

- Adjustable voltage: 30 to 200 V with 1V steps
- Negative rectangular pulse, adjustable width: 30 ns to 1.2  $\mu$ s, steps of 2.5 ns, fall time < 10 ns (200 V, 50  $\mu$ s)
- Maximum PRF 30 kHz with change of focal laws

### Receivers

- Bandwidth: 0.5 to 25 MHz
- Adjustable gain on each channel from 0 to 80 dB
- Adjustable analog DAC 80 dB (max. 20 dB/ $\mu$ s) synchronized on events
- Crosstalk between two channels: gain > 60 dB
- Maximum input signal amplitude  $\pm$  1V

### Digitizer

- Digitizing and real-time summation on 8-channel boards
- Maximum sampling frequency: 100 MHz (adjustable from 100 MHz to 6.6 MHz)
- Range: 10 bits (12 and 14 bits available upon request)
- Input impedance: 50 $\Omega$
- Global delay: 0 up to 1.6 ms, steps of 10ns
- Delay laws at transmission/reception: 0 to 20  $\mu$ s, steps of 2.5 ns
- Digitizing: up to 65,000 samples
- Digital and analog FIR filters

### Simulation of ultrasonic field, focal law computation

- Simulation tools (CIVA subset)
- Complete description of the testing configuration
- Focal law and associated ultrasonic field computation
- 3D interactive display

### Input-Output

- USB2 for data transfer
- 2 FRB (Hypertronix) for phased-array probe
- Encoders input
- External power supply input

### Online processors

- 2 CPUs (PowerPC) on CPU board allow fast and flexible processing options

### Platform

- Software environment: Windows XP
- Usb2 link between hardware and PC (desktop or laptop)

### Compatibility

- Multi2000 and MultiX imaging and analysis compatible with CIVA
- NDT configuration compatible with CIVA
- MASERA Software: data analysis

MULTI2000

MULTIX

MULTIX LF

POCKET