



# Technical specifications

## MULTIX LF

## M 2 M

Phased Array Technologies

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

Fully parallel architecture with 16, 32, or 64 channels  
Additional configurations available on an 4-channel 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)
- Max data flow > 30 MB/s. Max 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, 2D, 3D)

### Pulsers

- Adjustable voltage: 30 to 400 V with 10V steps
- Negative rectangular pulse, adjustable width: 50 ns to 10  $\mu$ s, steps of 10 ns, fall time < 10% pulse duration(400 V, 50  $\mu$ s)
- Maximum PRF 30 kHz with change of focal laws
- Library of 30 editable pulses

### Receivers

- Bandwidth: 50 kHz to 5 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 > 45 dB
- Maximum input signal amplitude  $\pm$  2V

### Digitizer

- Digitizing and real-time summation on 4-channel boards
- Maximum sampling frequency: 50 MHz (adjustable from 50 MHz to 2 MHz) with real-time averaging
- Range: 12 bits
- 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 50,000 samples
- Digital and analog FIR filters (9)

### 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
- Phased-array and conventional probe connectors
- 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

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