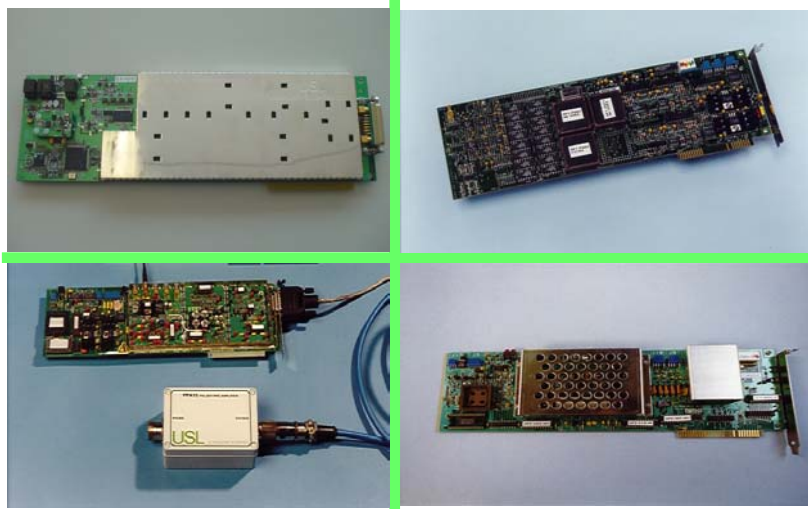


PC expansion boards for ultrasonic testing



- The culmination of over 15 years experience in designing PC expansion boards
- A complete range of boards for ultrasonic testing and data acquisition
- Industry leaders in sensitivity, signal/noise ratio and noise immunity
- Pulser receivers, high speed data acquisition, analogue digital converters, motion controllers

Since 1987 Ultrasonic Sciences have been designing and applying PC expansion boards in ultrasonic testing systems. The current range is the most comprehensive available anywhere. We guarantee that you will not find a better combination of sensitivity, noise immunity and acquisition speed from any comparable product. In fact, the performance equals or exceeds that available from even the most sophisticated of conventional “flaw detectors”. Examples of applications include:

- In line systems for tube, bar and plate inspection in manufacturing environments
- Scanning acoustic microscopy
- Single and multi-channel immersion tanks for industry, laboratory and research
- Systems for inspection of welded tube, pipe and power generating plant
- Squirter inspection systems for aerospace composites

This leaflet provides a brief introduction to the range and application - please contact us for more detailed information on any of these products.

USL expansion boards-brief description and application

PULSER RECEIVERS	
PM30 Pulser Receiver	This is the most advanced board of its type commercially available. It combines linear and logarithmic amplifiers for optimum results on the widest possible range of applications and materials. It is used in conjunction with a remote PPA15 pulser preamplifier or remote Multiplexers, giving up to 32 channels. Bandwidth <0.5 to >30MHz at -3dB, instantaneous dynamic range (log) >90dB, gain range (linear) 140dB, programmable filters with variable bandwidth and centre frequency, 20kHz PRF, 60dB TVG/DAC with >1024 points and 20dB/microsec slope. All parameters programmable at full PRF rate. Detection of 0.2mm FBH at 40mms with S/N ratio better than 12dB and 1/64" FBH sensitivity at 250mms in metals. Capture of attenuation in thin carbon and thick honeycomb at the same setting.
PR15 and PL15 Pulser Receivers <i>(Due to be discontinued in 2007)</i>	The PR15 is a high specification Pulser Receiver for use in single and multi-channel applications. Used with a remote Pulser Preamplifier (PPA15) or remote Multiplexer (MUX8 - up to 8 channels). Frequency range 0.25-25MHz, high power pulser-600V, variable pulse width, 116dB gain, bandpass filters with programmable bandwidth and centre frequency, programmable DAC/TVG. Remote PPA or Multiplexer can be up to 300 metres distant. Better than 1/64" FBH sensitivity at 250mms. The PL15 is similar to the PR15 but uses a logarithmic detector (log amplifier). Instantaneous dynamic range of >65dB, particularly suited to inspection of composites. Both PL15 and PR15 are fully programmable, with parameters programmed and switched at full PRF rates, up to 10kHz.
PR20 and PR50 Pulser Receivers	High frequency Pulser Receiver for use in a range 20-50MHz. 300V spike pulser with fast rise time. 63dB gain. The PR20/50 must be used in conjunction with the MSC (Master System Controller) board. PR20/50 and MSC are normally housed in the USL Expansion Crate but can also be housed directly in the PC. The PR20 is similar to the PR50 but designed for application in the 1 - 30MHz frequency range with a 600V square wave pulser with variable pulse width (potentiometer adjustment).
DATA ACQUISITION BOARDS	
ADC100XL Analogue Digital Converter	100 Mega sample per second (100MHz) single shot analogue digital converter. Used for digitisation of RF / A scan waveforms. 8x32kbytes memory with fully random access. Interleaved sampling at up to 25GHz. 4 independent inputs, each with offset and gain control. External or Internal trigger. Interface trigger function. Fully supports multiplexing.
DSP Digital Signal Processor	Digital signal processing board for use with the ADC100. Processes digitised waveforms at high PRF rates (up to 10kHz) on up to 8 gates simultaneously. Amplitude, time measurement and phase detection modes can be programmed. Used in C scan systems for metals and composites.
ATP4 Amplitude and Time Processor	Single shot measurement of peak amplitude and time of flight at frequencies up to 50MHz. Up to 4 programmable gates. Board can be configured for 1 or 2 time gates and up to 4 amplitude gates, with a total number of 4. 10 nanosec gate delay and width increments. Main bang and interface trigger modes.
MOTION CONTROL	
MSC Master System Controller	This board combines three functions - control of PR20/PR50 pulser receivers, stepper motor control of up to 3 axes, and general purpose analogue and digital I/O. Motor control and analogue input functions can be used for C scan imaging using an external flaw detector with analogue gated peak detector.
SI6 6 axis stepper motor interface	Provides stepper motor control and encoder input for up to 6 axes of motion. Scan program is controlled by the PC software.
EXPANSION & COMMUNICATION	
UIMT100	Transmitter board for use in host PC when using the USL Expansion Crate (UIM73).
UIMC/UIMR	These boards are housed in the UIM73 Expansion Crate, linking with the UIMT100 in the host PC. The UIMR board is used when PR15 or PL15 boards are housed in the expansion crate.
UP15	This is used in conjunction with the PM30, PR15 and PL15 when they are housed directly in a PC. It provides low noise communication with the pulser receiver. For non-multiplexed operation, a 600V HT power supply is included.
UCM10	Used with PRM15 and PLM15 boards when multiplexing of the ATP4 parameters is required.

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