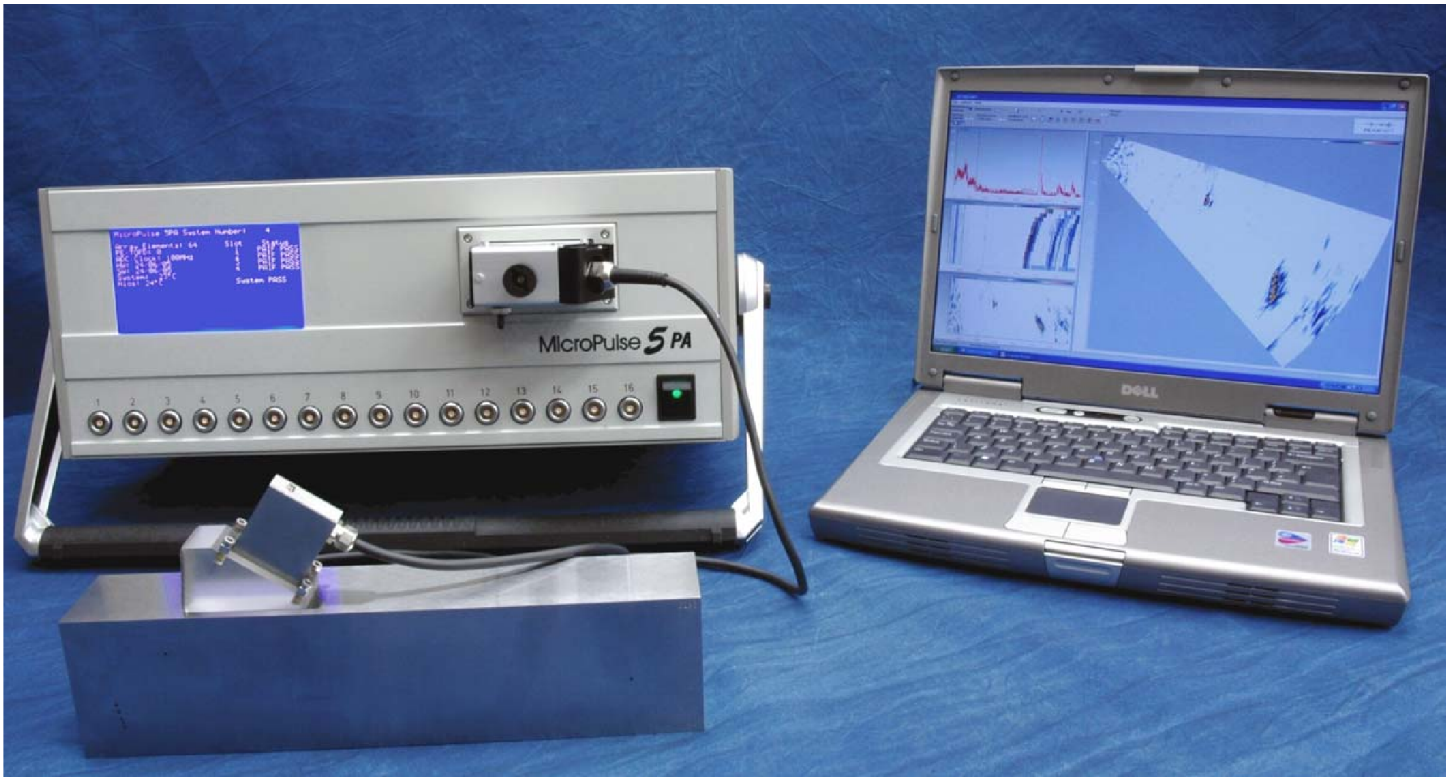
MicroPulse 5PA Product Specification



Product Overview

Phased Array MicroPulse (64/64, 128/128, 256/256, 512/512, all channels may be used for beam forming) with optional separate channels for high-performance pulse-echo and TOFD (available in multiples of 16 channels).

Software Platforms

PNL ArrayGen with SimulUS beam modelling software as standard. Also compatible with British Energy MIPS/GUIDE and UTEX Winspect/InspectionWare. Open data format and long-established MicroPulse command language mean that the users have the option to write their own applications.

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Specification of Phased Array Channels

	Parameter	Range	Step Size
Pulser	Pulser Type	Negative square wave	N/A
	Pulser Voltage	5 to 200Volts	5Volt
	Pulser Rise Time	<5ns	N/A
	Pulser Width	20nsec to 500nsec	2nsec
	Pulse Repetition Frequency	1Hz to 20kHz	1Hz
	Pulser Delay	0 to 25000nsec	1nsec
Receiver	Gain	70dB	0.25dB
	Input Noise	2nV typical	N/A
	Gain Linearity	Better than 0.25dB	N/A
	Input Impedance	50Ω	N/A
	Bandwidth	0.75MHz to 20MHz (-3dB)	N/A
	Filters	0.75MHz to 5MHz (-3dB) Bandpass Filter 5MHz to 10MHz (-3dB) Bandpass Filter 2MHz to 10MHz (-3dB) Bandpass Filter 0.75 to 20MHZ Broadband	Discrete selection
	Receiver Delay	0 to 25000ns	1nsec
	Dynamic Depth Focusing	At 100MHz realtime	N/A
	Channel Crosstalk	Better than 60dB between channels at 2MHz	N/A
Distance Amplitude Correction	DAC Dynamic Range	0 to 40dB	0.25dB
	DAC Trigger	Transmit pulse or material interface echo	User selectable
	No of DAC curves	256 utilising up to 64kbytes	N/A
	DAC update	40dB/µsec	N/A
	DAC clock rate	0.78125MHz, 1.5625MHz, 3.125MHz, 6.25MHz, 12.5MHz and 25MHz selectable	
Digitiser and Digital Processing	ADC Resolution	12 bits	N/A
	ADC Rate	25, 50 and 100MHz	
	Element Summing	Up to 512 channels	N/A
	Rectification	No Rectification Fullwave +ve halfwave -ve halfwave	Discrete selection
	Post Rectification Filter	None and 7 selectable settings	
	Gates	1 gate utilising up to 64kbytes	N/A
	Gate Delay	64k sample points from trigger or I/F echo	
	Hardware Peak Processing	for each gate up to 80 peaks (N + largest), first peak, largest peak	
	Peak Threshold	5 to 2047%	½%
	Averaging	2 to 256 realtime	
	GRE	1 element, n elements or summed waveform	

Specification of Conventional Channels

	Parameter	Range	Step Size
Pulser	Pulser Type	Negative square wave	N/A
	Pulser Voltage	50 to 300Volts	50Volt
	Pulser Rise Time	<5ns	N/A
	Pulser Width	20nsec to 500nsec	2nsec
	Pulser Damping	50Ω to 660Ω in 8 steps	N/A
	Pulse Repetition Frequency	1Hz to 20kHz	1Hz
Receiver	Gain	70dB	0.25dB
	Input Noise	2nV typical	N/A
	Gain Linearity	Better than 0.25dB	N/A
	Input Impedance	660Ω	N/A
	Bandwidth	0.75MHz to 25MHz (-3dB)	N/A
	Filters	0.75MHz to 12MHz (-3dB) Bandpass Filter 2.5MHz to 18MHz (-3dB) Bandpass Filter 3MHz to 22MHz (-3dB) Bandpass Filter 3MHz to 25MHz (-3dB) Bandpass Filter 0.5MHz Bandpass Filter 1MHz Bandpass Filter 2MHz Bandpass Filter 4MHz Bandpass Filter 5MHz Bandpass Filter 10MHz Bandpass Filter 5MHz 2nd order TOFD Bandpass Filter 10MHz 2nd Order TOFD Bandpass Filter	Discrete selection
	Channel Crosstalk	< 60dB between channels at 2MHz	
Distance Amplitude Correction	DAC Dynamic Range	0 to 40dB	0.25dB
	DAC Trigger	Transmit pulse or material interface echo	User selectable
	No of DAC curves	32 utilising up to 32kbytes	N/A
	DAC update	40dB/µsec	N/A
	DAC clock rate	0.78125MHz, 1.5625MHz, 3.125MHz, 6.25MHz, 12.5MHz and 25MHz selectable	
Digitiser and Digital Processing	ADC Resolution	12 bits	N/A
	ADC Rate	25, 50 and 100MHz	N/A
	Rectification	No Rectification Fullwave +ve halfwave -ve halfwave	Discrete selection
	Post Rectification Filter	None and 7 selectable settings	N/A
	Gates	1 gate utilising up to 64kbytes	
	Gate Delay	64k sample points from trigger or I/F echo	
	Hardware Peak Processing	for each gate up to 80 peaks (N + largest), first peak, largest peak	
	Peak Threshold	5 to 2047%	½%
	Averaging	2 to 256 realtime	

General Specifications

Connectors and Interfaces etc	Phased Array Connector	160-pin female connector. Hypertronics™ HLMYJPAPF1600
	Conventional UT Connector	Triaxial 1S connector. Lemo ERA.1S.650.CTL
	Interface	100/10Base-T Ethernet capable of up to 7Mbyte per second
	Encoders	4 axes of 32 bit encoder inputs accepting encoders between 5 and 15Volt and at rates of up to 700kHz
	Digital I/O	8TTL compatible inputs and 8 open collector outputs capable of sinking up to 400mA
	Oscilloscope Outputs	Trigger, Gate, A-scan. Showing either an individual channel or a summed waveform (reconstituted analogue signal obtained from digitised waveform)
	Case Size	450mm x 380mm x 170mm
	Power Supply	90-260 VAC at 45-100Hz
	Weight	15kgs