

MicroPulse LT

Product Features



Built on MicroPulse technology, the LT is a high performance ultrasonic inspection system designed to be compatible with the existing MicroPulse family. The LT is a complete package with small footprint, utilising PoE technology. Ideally suited for machine mounted inspections.

Overview

It connects to a PC running the test application via Ethernet. It takes power from the Ethernet or from a separate 48V power source. It is available as a 2-channel, a 4-channel or an 8-channel version. It is suitable for use in pulse-echo, TOFD and immersion inspections where because of its small size it may be gantry mounted.

Software Platforms

Compatible with existing inspection platforms such as EDF Energy's MIPS/GUIDE and Winspect/InspectionWare from UTEX, the open data format and long-established MicroPulse command language mean that users also have the option to write their own applications, from Visual Studio to LabView, MatLab and Python.

Features

- Small/rugged/lightweight
- Inputs for 2 axes of encoders for true pulse on position
- Outputs digitised waveform and/or peak-detected data
- Up to 4 hardware gates
- Extended dynamic range modes
- PoE

Applications

- Immersion tanks
- Gantry systems
- In-situ monitoring
- Small scale inspections in hard to access areas

Full Information available at www.peakndt.com

MicroPulse LT Specification

	Parameter	Range	Step Size
Configurations		2, 4, 8 channels	
Pulser	Pulser Type	Negative square wave	-
	Pulser Voltage	25 to 200Volts	25Volt
	Pulser Rise Time	<5ns	-
	Pulser Width	20nsec to 502nsec	2nsec
	Pulser Output Impedance	<10 Ω	-
	Pulser Damping	50 Ω too 660 Ω in 8 steps	-
	Pulse Repetition Frequency	1Hz to 20kHz	1Hz
	Parallel Firing	No	
	Phased Array Pulser Delay	N/A	
	Number of Tx Focal Laws	N/A	
Tx Voltage Apodistion	N/A		
Receiver	Gain	-6 to 70dB NB Max DAC plus main gain is 110dB	0.25dB
	Input Noise	2nV/ $\sqrt{\text{Hz}}$ typical	-
	Gain Linearity	Better than 0.25dB	-
	Input Impedance	660 Ω	-
	Bandwidth	0.75MHz to 25MHz (-3dB)	
	Analogue Filters	0.75MHz to 12MHz (-3dB) Bandpass	discrete selection
		2.5MHz to 18MHz (-3dB) Bandpass	
		3MHz to 22MHz (-3dB) Bandpass	
		3MHz to 25MHz (-3dB) Bandpass	
		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			
Digital Filters	No		
Phased Array Receiver Delay	N/A		
Number of Rx Focal Laws	N/A		
Dynamic Depth Focusing	N/A		
Channel Crosstalk	>60dB between channels at 2MHz		
Distance Amplitude Correction	DAC Dynamic Range	0 to 70dB NB Max DAC plus main gain is 110dB	0.25dB
	DAC Trigger	Transmit pulse or material interface echo	Selectable
	No of DAC curves	256 utilising up to 32kbytes	-
	DAC update	40dB/ μsec	-
	DAC Clock	1.5625MHz to 25MHz	5 settings (selectable)
	Water path DAC		
Digitiser and Digital Processing	ADC Resolution	12 bits	-
	Amplitude Resolution	16 bits	
	Sample Rate	25, 50 and 100MHz (and 200MHz HRES)	Selectable
	Number of ADC's	1 per 4 channel block	
	Element Summing	N/A	N/A
	Acquisition Gate Delay	64k sample points from trigger or I/F echo	1 sample point
	Acquisition Gate	Up 32K sample points	1 sample point
	Rectification	No Rectification	Selectable
		Fullwave	
+ve halfwave -ve halfwave			

Parameter	Range	Step Size
Smoothing	None and 7 selectable settings	-
Hardware Gates	4 gates utilising up to 32K samples each	-
Interface Echo	Hardware interface trigger for gate and DAC	-
Hardware Peak Processing	For each gate up to 80 peaks (N + largest), first peak, largest peak	Selectable
Output Options	Peak processed data and/or full digitised waveform	
Threshold	10 to 4095	1
Averaging	2 to 256 realtime	
Gain Reduced Firing	Selectable to be triggered on saturation with programmable adjustment level	

General Specifications

Interfaces	Communication Interface	100 Base-T Ethernet Up to 6.7MBytes/s
	Inter-system Master Slave	N/A
	Output Data Buffer	6Mbytes
	FMC Acquisition Buffer	N/A
	Digital Encoders	2 axes of 32-bit single ended encoder inputs accepting 5Volt encoders at rate of up to 700kHz
	Digital I/O	1 input/output (5Volt TTL compatible)
	Analogue Outputs	Trigger
Connectors	UT Connectors	Coaxial Lemo 00
	Ethernet Connector	IP67 rated 9-pin D-type
	LVDS Master/Slave	N/A
	Encoder Connector	Lemo 1B.310
	I/O Connector	Lemo 1B.310
	Power Connector	Lemo 0B.302
	Analogue O/P Connectors	Lemo 1B.310
Physical	Case Size (H x W X D)	45mm x 108mm x 160mm
	Power Supply	48V DC from Ethernet (Class 3) or separate supply (48V @ 300mA)
	Power Consumption	10W Max
	Weight	550g
Environmental	Operating / Storage Conditions	Operating Temperature: 0 to 40°C
		Storage Temperature: -10 to 55°C
		Relative Humidity: less than 85% non-condensing
	EMC	EN61326
Safety	EN61010	