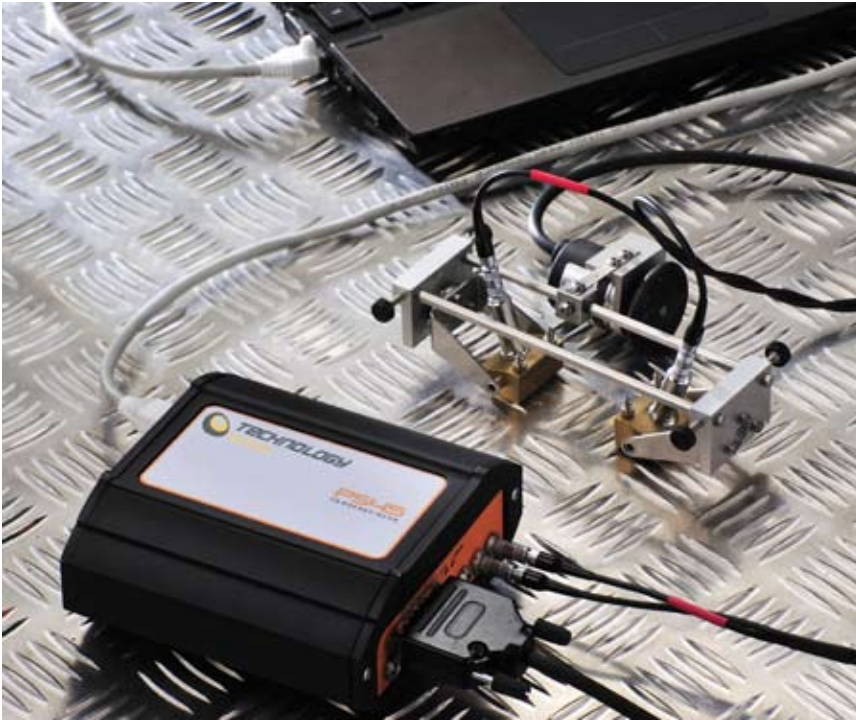# TD PS45 POCKET-SCAN - Multi-Function Ultrasonic Inspection Systems

Features

- Portable yet Highly Capable
- Ethernet Link - PS45 to Laptop
- Extensive Off-line Analysis Tools
- Built-in Reporting
- 2 Axis Encoder & Video Tracking
- Up to x32 Conventional Channels

Techniques

- ToFD
- Pulse Echo
- Corrosion Mapping
- Weld Zone Discrimination

Applications

- Pressure Vessel Welds
- Pipeline Welds
- Structural Welds
- Hydrogen Damage Surveys
- Corrosion Surveys
- Forgings & Castings
- Aircraft Components
- Complex Geometries

Software

- Pulse Echo
- ToFD
- Strip-Scan
- Long Range (Creep Wave & Corrosion Mapping)
- TD Super-View

E&OE - All specifications are subject to change. It is advisable to check all information provided.

TECHNOLOGY DESIGN

NOVA INSTRUMENTS

Hardware

General	
Number Of Pulser/Receivers	4/8/16/32
Number Of Software Channels	128

Digitisation	
Main Sampling Frequency	100MHz@8 bit
System Bandwidth(-3dB)	0.25MHz to 30MHz
Pulse Repetition Frequency	Up to 10KHz

Pulser	
Single/Twin Crystals	Yes
Output Impedance	6 Ohms
HT Pulse Shape	Negative square wave
HT Pulse Voltage steps of 5V	50 - 200V user definable
HT Pulse Width Range	20ns to 500ns in 2ns steps with < 5ns rise/fall time

Receiver	
Signal Bandwidth (-3dB)	0.25MHz - 30MHz
Gain Range	0dB to 100dB's in 0.1dB steps
Gain Linearity	0.25dB (typical)
Input Impedance	50 Ohms

Time Corrected Gain (TCG)	
Number Of Curves	8
Gain Range	0 to 100dB in 0.1dB steps on each element
Rate Of Gain Change	Up to 40dB/µs
DAC Time resolution	Automatically controlled using gate Parameters
DAC Start reference	Transmit Pulse or material i/f echo, user selectable

Analogue Signal Filtering	
High Pass Filters (-3dB)	0.25, 0.5, 0.75, 1.0, 2.5, 5, 10MHz
Low Pass Filters (-3dB)	1, 2.5, 5.0, 7.5, 10, 15, 20, 30MHz
Post Rect. Smoothing Filters (-3dB)	No filter, 1, 2, 3, 4, 5, 6, 7MHz, all filters selectable
Filter Roll-Off Performance	60dB per decade
Filter Type	6dB Transitional, minimal distortion

Power Requirement	
DC Input	6V to 12.5V @ 5Watts (approx.)
AC Input	90 to 260VAC @ 40 to 60Hz

Rectification	
Type	Unrectified, Full Wave, +1/2 Wave, -1/2 Wave
Linearity	Better than 1% full Scale

A-Scan Digitisation	
A/D Converter	100MHz@8 bit
Number Of A-Scan Points/Channel	8000 points per channel
Sampling delay	0 - 10ms, in 25ns steps @ 100MHz sampling rate

Signal Averaging	
Number Of Channels	All
Averaging Performance	100 million points per second
Averaging Rates	Real-time averaging 1- 256, user definable

Peak Processing	
Peak Storage Modes	All Peaks, First Peak, Largest Peak/s, Loss Of
Thickness Measurement Modes	Thinnest/Thickest/Between Peaks
Threshold Setup	5 to 100% in 1% steps per hardware Gate
Number Of Peaks Per Gate	64

Scanner Interface	
Input Type	Encoder, Potentiometer or Video Camera
Number Of Axis	2, TTL compatible
Number Of Limit Inputs	2, TTL compatible
Encoder Interface	TTL compatible, 5V @ 250mA(max), 100KHz max
Potentiometer Interface	0 to 2.5V, sampled at 100Hz
Video Camera Input	1Vpp Composite Video (PAL, RS-170)

PC & Operating System	
Operating System	Windows 7 Pro® 32-bit & 64-bit
CPU	iCore3 Ram 2GB or better
Ethernet	RJ45

Size, Weight & Environmental	
Unit Dimensions	4 Channel - tbc
	8 Channel - 123 x 124 x 58mm
	16 Channel - 123 x 124 x 76mm
	32 Channel - tbc
Weight	4 Channel - tbc / 8 Channel - 650g
	16 Channel - 870g / 32 Channel - tbc
Rating	Designed to IP54
Temperature	0ºC to 40ºC operating, -25ºC to 85ºC storage

Software

General Features

- Simultaneous ToFD & Pulse Echo data collection
- Operator definable weld geometry overlays
- Real-time A, B, C and D-Scan images, with user defined display modes
- Internal report generation including interactive print-preview & user-definable report fields
- Full cursor analysis indicating peak depth, amplitude and x,y position
- Export Bitmap images to any Windows application
- 8 bit Data collection

Pulse Echo

- Independent control of transmit and receive parameters
- C-scan with end views for corrosion mapping
- Trigger reference modes including Interface Echo or Tx Pulse
- Multiple peak data storage modes, including full/selective A-Scan storage

ToFD

- Perform multi-channel TOFD and Pulse Echo inspections simultaneously
- Full suite of image analysis tools for defect/crack sizing
- Real-time multi-channel averaging significantly improves signal quality
- Linearization, Straightening, Synthetic-Aperture-Focusing-Technique (SAFT)
- File utilities include file join, split, reverse, save partial, output data to text file etc.

Weld Zone Discrimination

- Combined TOFD, Time/Amplitude view, Map view, Couplant Check & Go/No-Go in a single pass
- Inspection data displayed as strips indicating weld zones
- Integrated TOFD analysis
- Automated report generator

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