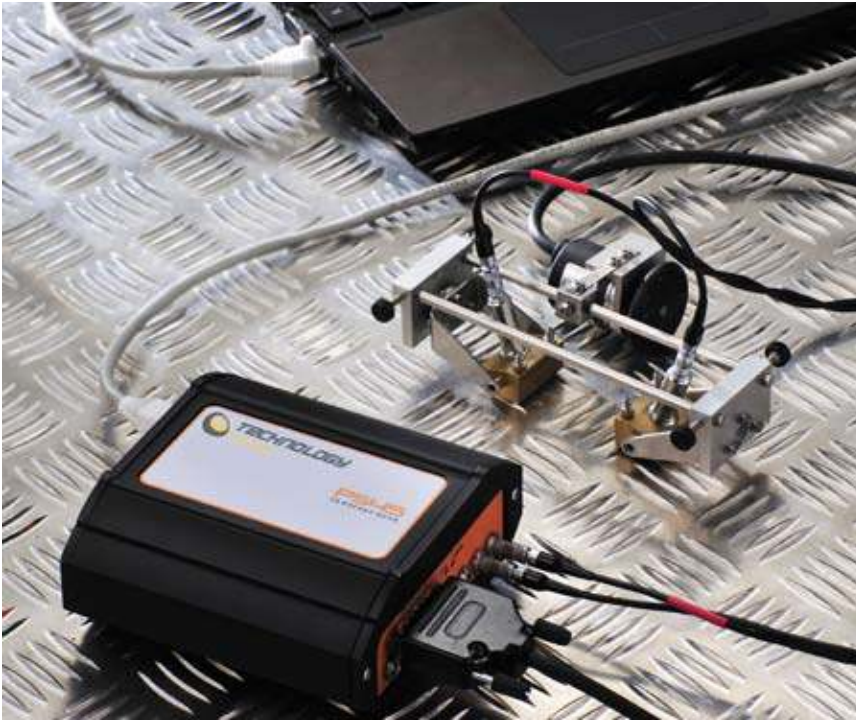




## TD PS45 POCKET-SCAN - Multi-Function Ultrasonic Inspection Systems



### 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.*



## TD-PS45 Pocket-Scan Technical Specification

### Hardware

#### General

|                             |           |
|-----------------------------|-----------|
| Number Of Pulsers/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      |

#### Pulsar

|                              |  |
|------------------------------|--|
| 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<br>8 Channel - 123 x 124 x 58mm<br>16 Channel - 123 x 124 x 76mm<br>32 Channel - tbc |
| Weight          | 4 Channel - tbc / 8 Channel - 650g<br>16 Channel - 870g / 32 Channel - tbc                           |
| Rating          | Designed to IP54   |
| Temperature     | 0°C to 40°C operating, -25°C to 85°C 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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