TD Handy-Scan RX • Multi-Function Ultrasonic Inspection Systems
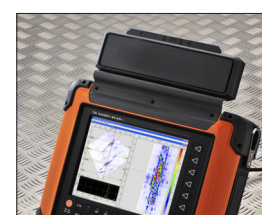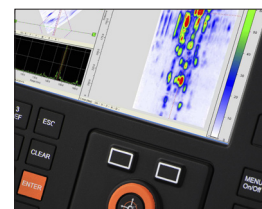

Features

- Highly Portable
- Exceptional Performance
- Affordable Price
- High Speed Real-time Data Collection
- Fast Inspection Speed
- Sunlight Readable Screen
- Extensive Analysis Tools
- Easy to Use Menus
- Powerful Reporting Functions
- Removable Battery
- 2 Axis Encoder; Video tracking
- Includes ESBeamTool®
- Import setups from ESBeamTool®

Techniques

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

Applications

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

Software Options

- Phased Array/Pulse Echo
- ToFD
- Strip-Scan (AUT)
- Long Range (Creep Wave & Corrosion Mapping)
- TD Super-View
- ESBeamTool® included

TECHNOLOGY DESIGN

TD Handy-Scan RX Hardware Specification

System Options		
64 Elements (D Type 78 way)	32 Active	8 Conventional (Lemo 00)

General	
Number Of Focal Laws	1700 max
Dynamic Depth Focusing	Yes

Digitisation	
A/D Sampling Frequency	Phased Array = 8Bit & 14Bit @ 100MHz
	Conventional = 8Bit & 14Bit @ 100MHz
System Bandwidth(-3dB)	Phased Array = 0.75MHz to 25MHz
	Conventional = 0.75MHz to 25MHz
Max Pulse Repetition Frequency	Variable up to 5KHz

Pulser	
Number Of Pulsers	64
Number Of Active Pulsers	1 to 32
Pulser Delays	0μs to 20μs in 2.5ns steps
Output Impedance	6 Ohms
HT Pulse Shape	Square wave
HT Pulse Voltage	Phased Array = 50 to 200V in 1V Steps
	Conventional = 50 to 200V in 1V steps
HT Pulse Width Range 2	0ns to 500ns in 2.5ns steps
Rise/fall time	< 5ns

Receiver	
Number Of Receivers	64
Number of Active Receivers	1 to 32
Receiver Delays	0μs to 20μs in 1ns steps
Gain Range	P/E=0 to 90dB in 0.1dB steps, P/A=0 to 72dB in 0.1dB steps
Input Noise Level	2.5nV/(Hz) ½ across full system bandwidth
Input Impedance	50 Ohms

Dynamic Depth Focusing	
Operation	Dynamically optimises receive focus delays
Range Of Operation	User specified depth/range in mm or μs
Performance	100MHz real-time

Receiver DAC Curves	
Number Of Curves	1 to 8
Rate Of Gain Change	Up to 40dB/μs

Digital Signal Filtering				
Band Pass Filters(-3dB)	Probe Frequency (MHz)	Narrow Band (MHz)	Wide Band (MHz)	Broad Band (MHz)
	1	0.75 - 1.5	0.75 – 4.0	0.75 – 25.0
	2	1.0 - 3.0	0.75 – 4.0	0.75 – 25.0
	4	2.0 – 6.0	0.75 – 8.0	0.75 – 25.0
	5	2.5 – 7.5	0.75 – 10.0	0.75 – 25.0
	7.5	1.5 – 11.25	07.5 -15.0	0.75 – 25.0
	10	5.0 – 15.0	2.5 – 20.0	0.75 – 25.0
	15	10.0 – 20.0	5.0 -25.0	0.75 – 25.0
	20	15.0 – 25.0	0.75 – 25.0	0.75 – 25.0
Post Rectification Filters (-3dB)	No filter, 1-15MHz in 1MHz steps			

A-Scan Digitizing	
A-Scan Points Per Channel	8000 samples per channel
Number Of Gates Per Channel	3 overlapping hardware Gates
Gate Start/Width	User definable in 40ns steps
Gate Reference Points	Transmit Pulse or Material Interface Echo
Storage Modes Per Gate	A-Scans, Peak Depth and Amplitude, both

Signal Averaging	
Number Of Channels	All (128 software channels)
Averaging Rates	Real-time averaging 2 - 256, user definable

Peak Processing	
Peak Storage Modes	All Peaks, First Peak, Largest Peak/s, Loss of Signal, Between
Threshold Setup	5 to 100% in 1% steps per hardware Gate
Number Of Peaks Per Gate	16 max

Scanner Interface Ports	
Input Type	Encoder, Potentiometer, Video Camera
Number of Axis	2 axis, TTL compatible
Encoder Interface	TTL compatible, 5V @ 1A, 12V @ 0.4A
Potentiometer Interface	0 to 2.5V, sampled at 100Hz
Video Input	1Vpp Composite

PC (Internal)	
Operating System	Windows® 7
3rd Party Software	AVG Antivirus®
	ESBeamTool® (Eclipse Scientific)
Processor	Intel Atom N270
Memory	2GB
Display Colour	TFT (Industrial type) 8.4"
TFT Display Resolution	800 x 600 - Sunlight Readable Screen
Storage	60GB SSD
Ports	2 x USB, 1 x 10/100 Ethernet, 1 x Video

Size, Weight and Environmental	
Unit Dimensions	270 x 300 x 110mm
Weight	5Kg
Rating	Designed to IP65
Temperature	0ºC to 40ºC operating, -25ºC to 85ºC storage

Battery Capability	
Operating Time	4 Hours (approx)
DC Input	19V
AC Input	90 to 260VAC @ 40Hz to 60Hz

TECHNOLOGY DESIGN