

HandyScan RX - Multi-Function Ultrasonic Inspection Systems







Features

- Highly Portable
- Sunlight Readable Screen
- **Extensive Analysis Tools**
- Powerful Reporting Functions
- Removeable Battery
- 2 Axis Encoder; Video tracking
- Import Setups from ESBeamTool®
- Up to x 8 ConventionalChannels
- Up to 32/64 Phased Array
- Simultaneous PA,ToFD and/or PE data collection
- 128GB SSD Storage

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

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



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NOVA INSTRI IMENTS

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



HandyScan RX - Technical Specification

Hardware

32/64 32 Active, 64 Elements, 8 Conventional 16/64 16 Active, 64 Elements, 4 Conventional Number Of Focal Laws 1700 max Dynamic Depth Focusing Yes 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

Number of Pulsers 16/32/64 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 = 5 to 190V in 1V Steps Conventional = 5 to 190V in 1V steps

HT Pulse Width Range 20ns to 500ns in 2.5ns steps Rise/fall time < 5ns

Number of Receivers 16/32/64 Number of Active Receivers 1 to 32 Receiver Delays

Oμs to 20μs in 1ns steps P/E=0 to 90dB in 0.1dB steps Gain Range P/A=0 to 72dB in 0.1dB steps

Input Noise Level 2.5nV/(Hz) 1/2 across full sytem bandwidth Input Impedance 50 Ohms

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

Number of Curves 1 to 8 Up to 40dB/µs Rate of Gain Change

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

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

Averaging Rates

All Peaks, First Peak, Largest Peak/s, Peak Storage Modes Loss of Signal, Between peaks

5 to 100% in 1% steps per hardware Gate Threshold Setup Number Of Peaks Per Gate 16 max

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

Operating System Windows®

3rd Party Software ESBeamTool® (Eclipse Scientific) Processor Intel®

2GB Memory

Display Colour TFT (industrial type) 8.4" TFT Display Resolution 800 x 600 - Sunlight Readable Screen

Storage 128GB SSD

Ports 2 x USB, 1 x 10/100 Ethernet, 1 x Video

Unit Dimensions 270 x 300 x 110 (WxHxD)

Weight 5ka

-10°C to 40°C Temperature - Operating

- Storage -25°C to 85°C (without batteries)

Battery Operating Time 4 Hours (approx)

DC Input

AC Input 90 to 260VAC @ 40Hz to 60Hz

Software

- Simultaneous Phased Array, 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 and user-definable report fields
- Full cursor analysis indicating peak depth, amplitude and x,y position
- Export Bitmap images to any Windows® application
- 8 or 14 bit Data acquiistion for Phased array, TOFD and Pulse Echo
- Import ESBeamTool® setups

- User configurable control of beam angle, focal distance and spot size
- Fixed-angle electronic or sectorial scans
- Dynamic Depth Focusing (DDF) provides a user-definable focal range
- 2000 Focal Laws
- Supports Linear probe/wedge geometry
- Normalisation of amplitude across sectorial scan angles or fixed angle focal laws
- Beam Apodisation
- Skip Correction provides correct depth/range relationship for multiple legs

- 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
- Linearisation, Straightening, Synthetic-Aperture-Focusing-Technique (SAFT) File utilities include file join/split, reverse, save partial, output data to text file

- 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

Weld Zone Discrimination

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



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