



Rack Mount FSRX II - Multi-Function Ultrasonic Inspection Systems



The FocusScan RX II is available in a rack mount enclosure for integration into a rack system.

Rack Mount systems offer the flexibility of customising numerous ancillary instruments and accessories into one portable unit.

The Rack Mount FSRX II offers all of the powerful features and functionality of our standard enclosure and can be connected to an external touch-screen monitor. The FocusScan RX II is available in various enclosure options including bare boards, standard enclosure, rack mount and customised cases.

Contact our sales team to discuss your specific custom-fit requirement.



Features

- Powerful Analysis and Reporting Functions
- Import Setups from ESBeamTool®
- 256PR Phased Array
 - 4 x 64 Element IPEX PA Connectors
 - 16 x Independent Conventional UT Connectors
- 128PR Phased Array
 - 2 x 64 Element IPEX PA Connectors
 - 8 x Independent Conventional UT Connectors
- Dual/2D Matrix and Dual Linear Array support
- 2 Axis Encoding, video tracking
- Simultaneous PA, ToFD and/or PE acquisition
- FMC/TFM
- Multi-channel/group data acquisition
- 128GB SSD Storage

Software

- Phased Array/TFM
 - FMC - Full Matrix Capture
 - HMC - Half Matrix Capture
 - Custom
 - Virtual Source - Linear
 - Virtual Source - Swept
 - PWI - Plane Wave Imaging
 - PCI - Phase Coherence Imaging
- TOFD
- Pulse Echo
- AWS compliant
- Strip-Scan (Zonal Discrimination)
- Long Range (Creeping Head Inspection Method corrosion detection)
- TD Super-View
- ESBeamTool® included

Applications

- Pressure Vessels
- Pipeline Girth Welds
- Composites
- Structural Welds
- Forgings & Castings
- Turbine Disks & Blades
- Aircraft Components
- Hydrogen Damage Surveys
- Corrosion Surveys
- HTHA Surveys
- General Flaw Detection

Techniques

- Phased Array
- FMC/TFM
- TOFD
- Pulse Echo
- Corrosion Mapping
- Weld Zone Discrimination





Rack Mount FSRX II - Technical Specification

Hardware

System Options

16/32/64:128PR	Up to 64 Active, 128 Elements, 8 Conventional
16/32/64/128:256PR	Up to 128 Active, 256 Elements, 16 Conventional

General

Number of Active Channels	Up to 128
Number Of Focal Laws	Up to 890
Dynamic Depth Focusing	Yes

Digitisation

A/D Sampling Frequency	Phased Array = 8Bit & 14Bit Conventional = 8Bit & 14Bit
System Bandwidth(-3dB)	Phased Array = 0.25MHz to 25MHz Conventional = 0.25MHz to 25MHz
Max Pulse Repetition Frequency	Variable up to 10KHz

Pulser

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

Receiver

Receiver Delays	0µs to 20µs in 1ns steps
Gain Range	0 to 100dB in 0.1dB steps
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 TCG Curves

Number of Curves	Conventional - 1 per channel Phased Array - 1 per Focal Law
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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 peaks
Threshold Setup	5 to 100% in 1% steps per hardware Gate
Number Of Peaks Per Gate	16 max

FMC/TFM

Data Acquisition mode	Full Matrix Capture, Half Matrix Capture, Custom
Wave Propagation	Any combination of T & L
Amplitude Fidelity	Yes
Encoded TFM	Yes
TFM Data Saving	Yes
TFM Modes	Conventional, PWI, PCI, Virtual Source (Swept, Linear)

Scanner Interface Ports

Input Type	Encoder, Video Camera
Number of Axis	2 Axis
Encoder Interface	TTL compatible, 5V @ 1A, 12V @ 0.4A
Video Input	1Vpp Composite
Motor Drive	2 Axis (24v, 5 Amps)

PC (Internal)

Operating System	Windows® 10
3rd Party Software	ESBeamTool® (Eclipse Scientific)
Processor	Intel Atom E3845
Memory	4GB
Storage	128GB SSD
Ports	3 x USB 2.0 1 x 10/100/1000 Ethernet, GPIO 1 x Video

Size, Weight and Environmental

Unit Dimensions	483 x 135.2 x 395.2 (WxHxD)
Weight	5.9kg
Temperature	-10°C to 40°C operating / -25°C to 85°C storage

Power Requirements

DC Input	19V
AC Input	90 to 260VAC @ 40Hz to 60Hz

Software

General Features

- Simultaneous Phased Array, TOFD, Pulse Echo and FMC/TFM data collection
- Operator definable weld geometry overlays
- Real-time A, B, C and D-Scan images, with user defined display modes
- On-Board 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 or 14 bit Data acquisition for Phased array, TOFD and Pulse Echo
- Import ESBeamTool® setups

Phased Array

- User configurable control of beam angle, focal distance and spot size
- Linear, Sectorial, Linear spread (Simple & Compound) and Single beam scans
- Dynamic Depth Focusing (DDF) provides a user-definable focal range
- Supports Linear, Dual Linear, 2D Matrix and Dual Matrix probe/wedge geometries
- Amplitude correction across sectorial scan angles or fixed angle focal laws
- Skip Correction provides correct depth/range relationship for multiple legs

FMC/TFM

- Integrated with TDSan
- Envelope processing
- Multi-channel/group data acquisition
- Multi-mode data processing (Conventional, PWI, PCI, Virtual Source Swept & Linear)
- Amplitude fidelity configurator

ToFD

- Perform multi-channel TOFD, Phased Array, FMC/TFM 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, SAFT, Parabolic cursors
- File utilities include file join/split, reverse, save partial, output data to text file etc

Pulse Echo

- Independent control of transmit and receive parameters
- C-scan with end/side 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, Couplant Check, Go/No-Go and Weld overlay views in a single pass
- Inspection data displayed as strip-charts indicating weld zones
- Integrated TOFD analysis
- Automated report generator with acceptance configurator
- Zoned weld overlay display
- Scan progress indicator
- Conventional B, C and TFM display for additional channels