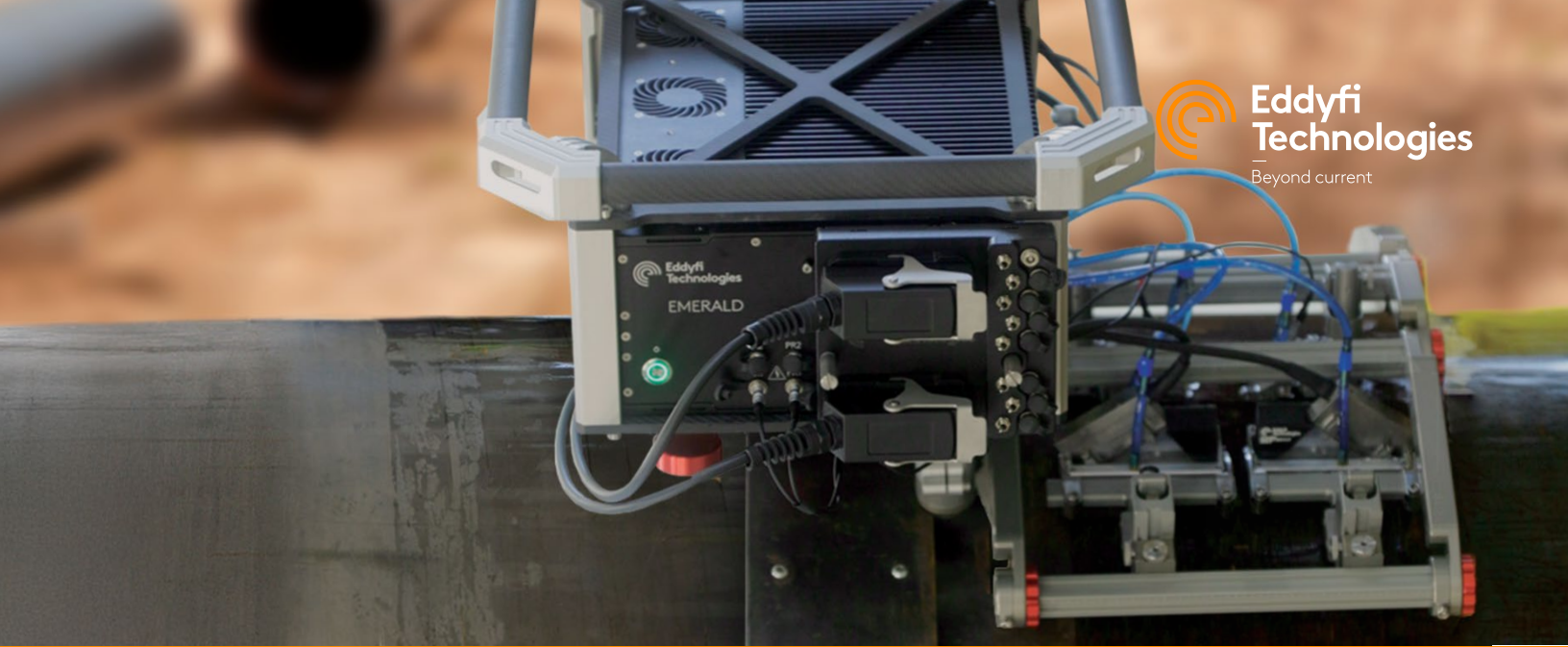




Applications
Brochure

WELDXprt

X may mark the spot, but WeldXprt maps the path to complete pipeline girth weld integrity.

Speed matters in pipeline construction—and WeldXprt™ delivers. This complete Automated Ultrasonic Testing (AUT) solution combines high-performance software, advanced phased array instruments, rugged scanners, and precision probes into one seamless package. Designed for rapid deployment and confident decision-making, WeldXprt helps you inspect girth welds faster, with reliable, code-compliant results—onshore or offshore. When every minute counts, choose the solution that's built for the field and backed by expertise.

ADVANCED INSPECTION FOR SUPERIOR WELD INTEGRITY AND EFFICIENCY

Girth welds are critical junctures in pipelines, where even minor defects introduced during welding can compromise the entire structure's integrity. WeldXprt by Eddyfi Technologies is an advanced AUT solution developed with efficiency of inspection at its core and sets a new benchmark for the rapid inspection of pipeline girth welds at the point of installation. Engineered for both onshore and offshore installation projects with flexible options for deployment and supporting multiple advanced techniques out-of-the-box. WeldXprt delivers swift results ensuring confidence in weld integrity at the highest production rates.

From software to scanner,
WeldXprt is the fastest
path to reliable pipeline
girth weld inspection.



BENEFITS

- Ultra-efficient workflow and acquisition speed for rapid inspection and sentencing
- Dedicated pipe girth weld user interface powered by the UltraVision® software engine with [long history and global support](#)
- Mission-critical reliability trusted by leading industries including oil & gas, nuclear power, defense, and aerospace
- Support for multiple techniques—Zonal PAUT, TOFD, PWI, TFM/PCI for highspeed assessments
- Real-time results and rule-based assisted analysis for streamlined decisionmaking
- Flexible instrument options – Emerald or TOPAZ64

MULTIPLE TECHNIQUES. ONE SEAMLESS WORKFLOW.

Flexible deployment driven by the powerful [Emerald](#) or TOPAZ64 instruments, coupled with an advanced automated scanner, WeldXprt supports acquisition using multiple methods including:

- Zonal Discrimination Technique
- Conventional Ultrasonic Testing (UT)
- Time-of-Flight-Diffraction (TOFD)
- Phased Array UT (PAUT)
- Full Matrix Capture (FMC) with Total Focusing Method (TFM)
- Plane Wave Imaging ([PWI](#)) [combined with TFM](#)

Its automated calibration routines, real-time data analysis, and user-friendly interface streamline the inspection process, reducing setup times and improving production rates. Operators can rely on WeldXprt to meet the most stringent industry standards while minimizing rejection rates and ensuring long-term pipeline integrity.

For those focused on achieving superior weld integrity, WeldXprt offers the next generation of inspection technology, bringing enhanced efficiency and performance to every pipeline project.

With flexible deployment options and all-in-one ultrasound technique capability out of the box, WeldXprt maximizes AUT service providers equipment utilization to tackle a wide range of inspections and configurations.

The turnkey solution can be configured either with the Emerald for both integrated-onboard setup or remote configuration, delivering up to 50% higher data throughput, or with the TOPAZ64 for a de-mounted (remote) configuration, ideal for operators who require flexibility to deploy the instrument across other phased array inspection projects.

SMART SCANNING. FIELD-PROVEN RELIABILITY.

WeldXprt features a rugged, high-performance automated scanner engineered for demanding conditions. Key features include:

Band Compatibility:

- Fits standard CRC-Evans and RMS weld bands
- Supports standard 127mm (5in) and narrow 80mm (3.15in) bands for tight cutback applications

Pipe Range:

- Supports 4-8in NPS (114.3-219.1mm) OD pipes with optional drop plate
- Standard support from 8in NPS and up; adaptable for flat surface

Control Options:

- Fully operated via WeldXprt software or optional remote control
- Probe Capacity: Supports up to 10 probes (extension kit required)

Integrated Features:

- Built-in water irrigation system and pump
- Optional battery operation

Scan Speed: Up to 177mm/s (6.97in/s)

Umbilical: Lightweight, robust design for field mobility

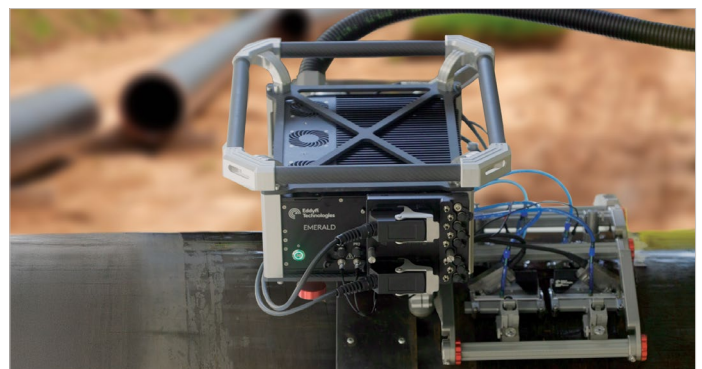


Figure 1: Advanced scanner for reliable deployment.

PIPELINE GIRTH WELDS. AUTOMATED. ASSURED.

Automated ultrasonic testing has emerged as the preferred method for pipeline weld inspection worldwide, gradually superseding traditional radiography. Radiography, with its inherent limitations such as poor planar defect detection, absence of vertical sizing capability, safety concerns, and environmental issues, has paved the way for the adoption of AUT. The advantages of AUT are manifold:

- Elimination of radiation hazard, chemicals, and licensing requirements
- Remarkably short inspection cycle time, ideal for high production rates.
- Enhanced detection and sizing accuracy, resulting in a reduced rejection rate
- Real-time analysis facilitated by leading-edge inspection software
- Storage of data and inspection reports in electronic formats for efficient record-keeping
- Quick feedback to the welding process, contributing to a decreased rejection rate

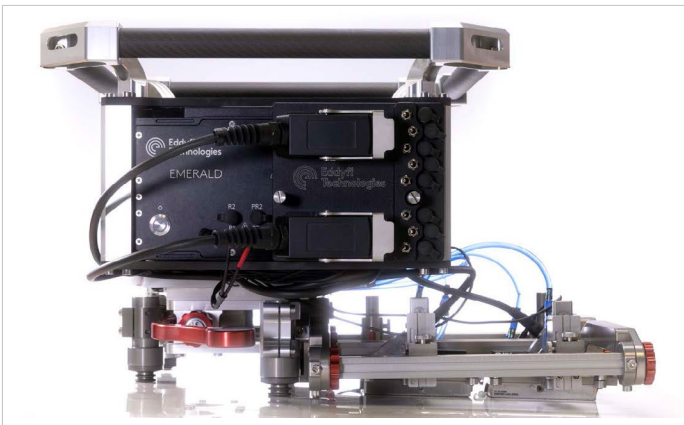


Figure 2: WeldXprt - A new generation of AUT for pipeline girth weld examination.

ULTRAVISION INSIDE: TRUSTED, PROVEN, POWERFUL.

WeldXprt is based on the robust and field-proven [UltraVision®](#) inspection software engine. Featuring a dedicated and streamlined user interface for Pipeline Girth Weld (PGW) examination, it is highly responsive. The workflow has been optimized for this specialized use case, ensuring the highest productivity during inspection campaigns. It features a comprehensive and cutting-edge software suite supporting users every step of the way from design of the inspection technique through to equipment setup, data acquisition, analysis, and reporting. The software has been designed to offer a powerful, flexible, and scalable solution for pipeline weld examination.

Inspection Software, Evolved.

RULE-BASED ASSISTED ANALYSIS

- Set rules for indication detection based on criteria
- Automatic application of codes with acceptance or rejection options
- Analyst verification
- Unique detection criteria for each rule
- Indication classification
- Automatic indication boxing and measurement
- Interaction and accumulation
- Weld status Accept/Reject highlighted and stored

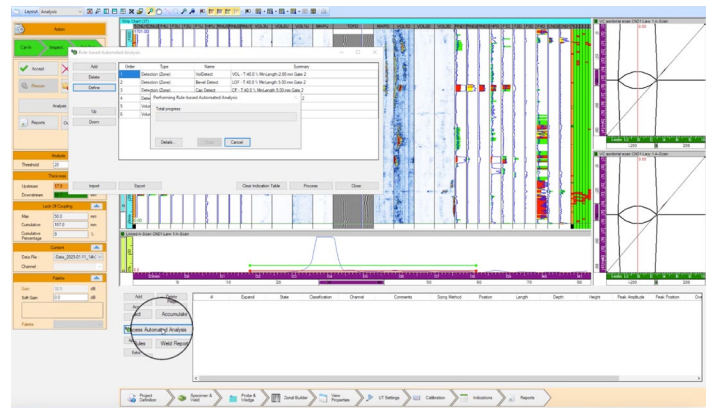


Figure 3: Rule-based assisted analysis

AUTO CALIBRATION

- Calibration routine with a single click
- Automatic reflector verification
- Red and Green status for Go/No-Go
- Calibration files saved with weld inspection data
- Assisted 'tap-in, tap-out' routine

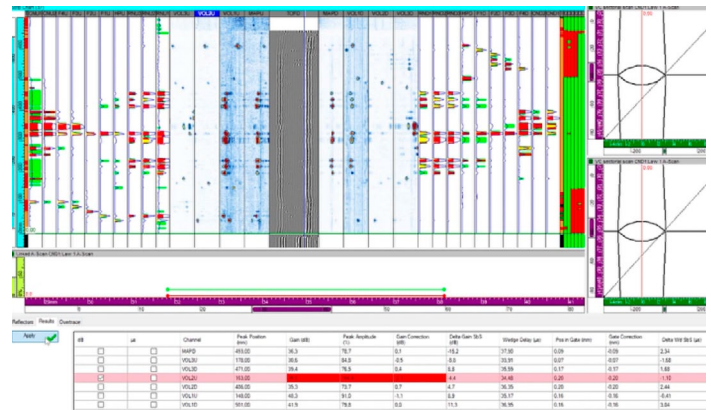


Figure 4: Auto calibration.

CALIBRATION ADJUSTMENT

- Calibration routine with a single click
- Automatic reflector verification
- Red and Green status for Go/No-Go
- Calibration files saved with weld inspection data
- Assisted 'tap-in, tap-out' routine



Figure 5: Calibration adjustment.

CALIBRATION BLOCK DESIGNER

- Built-in calibration block design
- Automatic or manual reflector creation
- Fine adjustment with live update
- Export mechanical drawing for fabrication
- Reflectors pull through directly into zonal builder and calibration routine

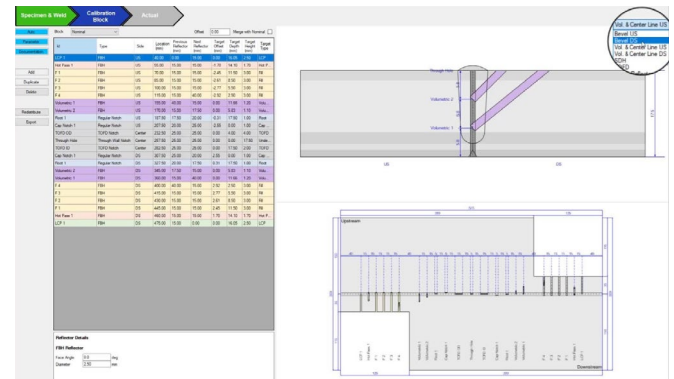


Figure 6: Calibration block designer.

AUTO ZONAL CONFIGURATION

- Automatic or manual Zonal Builder for quick beam solving.
- Zonal builder table for instant parameter adjustment.
- Configurable strip chart display.

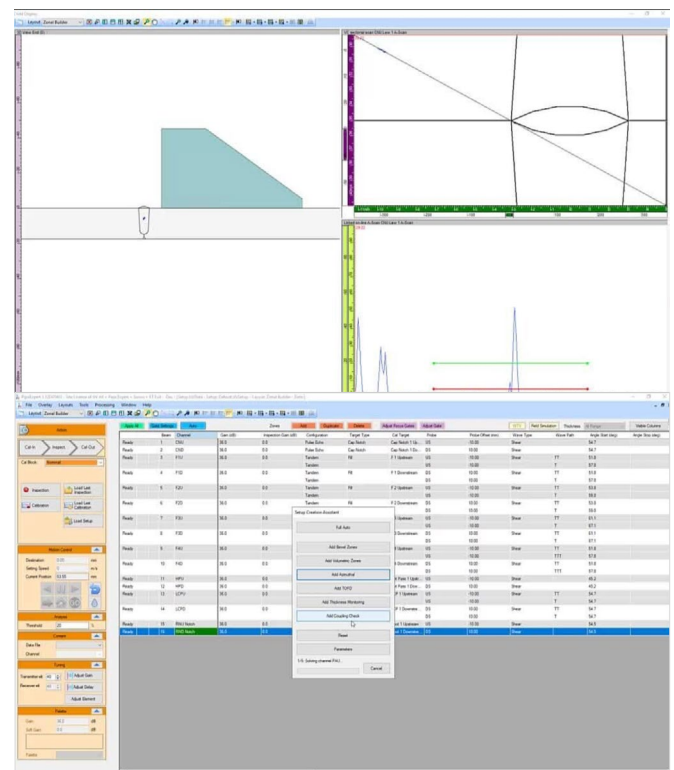


Figure 7: Auto zonal configuration.

BEAM SIMULATION

- Simulation for self-tandem and pulse echo modes
- Acoustic Field Simulation for TFM channels
- Automatic ideal aperture calculation
- Verify effective beam parameters

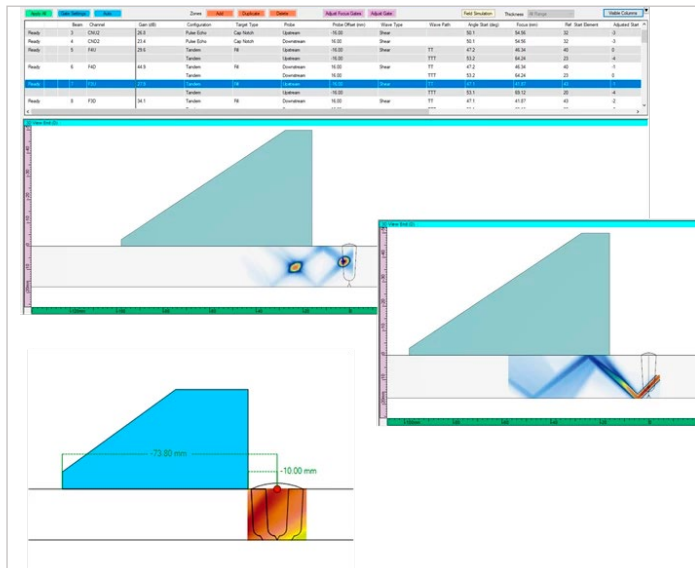


Figure 7: Beam simulation.

REPORTING AND 3D VIEWS

- Generate customizable weld reports with a click
- 3D views of weld and volumetric UT data
- Significant time savings in analysis and reporting

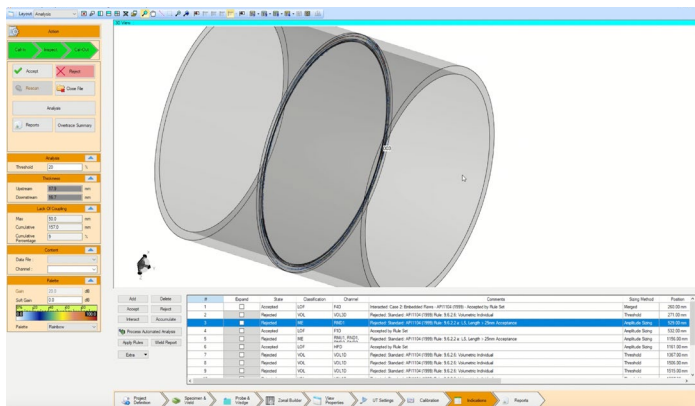


Figure 8: 3D reporting.

INSTRUMENT PLATFORM: BEST IN CLASS ELECTRONICS

Emerald

- 64/128PR + 2UT high performance phased array system
- FMC & PWI data acquisition with latest TFM processing and imaging
- High speed multi-channel configurations
- Industry leading signal quality and power
- Seamlessly integrated with WeldXprt & UltraVision 3 platforms



Figure 9: Emerald - compact, industrial phased array UT & TFM system.

SPECIFICATIONS

SYSTEM

Instrument Mounted Specifications	Dimensions (w × d × h)	Configured for Ø12": 397 x 696 x 481mm (15.6 x 27.4 x 18.9in) Configured for Ø72": 397 x 746 x 342mm (15.6 x 29.4 x 13.5in)
	Dimensions (w × d × h)	Configured for Ø12" - 224mm x 596mm x 308mm (8.8in x 23.5in x 12.1in) Configured for Ø72" - 224mm x 645mm x 233mm (8.8in x 25.4in x 9.2in)
	Weight	7.5kg (16.5lb) scanner only
	Weld band widths	Band cross-section geometry Standard idler wheel assemblies (BAS002) are compatible with typical CRC Evans or RMS Welding Systems bands Minimum width 80 mm (3.15 in) Maximum width 127 mm (5 in)
Instrument De-Mounted Specifications	Weld band diameters / pipe diameter ranges	Minimum OD Standard configuration 203 mm (8in) With drop-plate adapter 102 mm (4in)
	Maximum scanning speed	177mm/sec (6.97in/sec)
	Scanner power requirements	100-240 VAC, 50/60 Hz, 3.5A (Optional Battery)
	Maximum umbilical length	60m (200ft)
	Required radial clearance above band OD	On 10in OD band 232mm (9.1 in)
		On 74in OD band 218mm (8.6 in)

INSTRUMENT

Dimensions (w × d × h)	294 × 162 × 373 mm (11.5 × 6.4 × 14.7 in)
Air intake	No
Voltage	100 to 240 VAC
Frequency	50 or 60 Hz
Instrument calibration	Compliant with ISO 18563-1/ISO 22232-1

ENVIRONMENTAL

IP rating	Instrument	Designed for IP65*
	Scanner	Designed for IP65*
Operating temperature	Instrument	-10C to 45C (14F to 113F)
	Scanner	-20C to 50C (-4F to 122F)
Storage temperature range	Instrument	-40C to 70C (-40F to 158F)
	Scanner	-20C to 50C (-4F to 122F)
Surface & band temperature	Scanner	Maximum 50C (122F)

*Not submersible

PULSERS

Channel configuration	64/128 PR
Maximum applied voltage (50 Ω load)	PA: 150Vpp (Bipolar) / 75V (Unipolar) UT: 200V
Maximum PRF	≤ 30 kHz
Max focal laws	2048

ACQUISITION

Acquisition	A-Scan/Peak/Conditional data recording
Acquisition triggered on	Free running, encoder position, external signal
Digitizing range	800%
Max data file size	Limited by hard drive

FMC/TFM

Maximum number of reconstruction channels	128
Firing modes	FMC, PWI, Sparse
TFM frame size (on board)	1M points
TFM frame size (offline)	Unlimited
Simultaneous FMC channels	2
Maximum simultaneous TFM frames (on board)	2 (up to 1M points per frame) 8 (up to 256k points per frame)

I/O

PA connector	1x IPEX type (2x IPEX or 2x ZPAC with splitter module)
UT connectors	4 x LEMO 00 (8 additional LEMO 00 with splitter module)
Data connectivity Ethernet	5 GBit/second. Scan link embedded motor control.
Encoder interfaces	3 quadrature-type
I/O capability	12 inputs, 9 outputs
Automated probe detection	Yes (with Eddyfi/Zetec probe ID chip)

I/O and encoder daisy chaining for multi-instrument configurations

SPECIFICATIONS

RECEIVERS

Gain	Up to 124 dB (0.1 dB step), 76 dB Analog / 48dB Digital
Input impedance	50 Ω
Bandwidth (-3 dB)	PA: 0.5 to 18 MHz, UT: 0.5 to 22.5 MHz
Data compression	1, 2, 4, 8, 16
Amplitude resolution	14-bit elementary A-Scan, 16-bit PA
Max number of samples	16k
Max A-scan range	65k samples
Measurement gates	6 + 1 synchronization gate (peak, crossing, auto-crossing, homing)
Parallel PA channels processing	Up to 2 channels
Rectification	Digital
Filtering	Analog / Digital (FIR)
Digitizing frequency	100 MHz
TCG dynamic range	40 dB

CERTIFICATION

Instrument	EMC standard EN 61326-1 (2020). EN-61010-1 (2019).
Scanner	CAN ICES-003(A) / NMB-003(A) CE & UKCA Certified

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