ZETEC
THE INSPECTION ADVANTAGE

TOPAZ®64

Fully Integrated, Portable 64 Channel Phased Array UT Device

ULTRA-INTELLIGENT ULTRASOUND

Smart Features

Welcome to Ultra-Intelligent Ultrasound.

Introducing TOPAZ®64, a fully integrated, portable 64 channel Phased Array UT instrument delivering faster, more accurate inspections. It combines the power of 64 active channels for Phased Array UT applications, with the industry's most advanced FULL MATRIX CAPTURE (FMC) and TOTAL FOCUSING METHOD (TFM) capabilities. TOPAZ64 can intelligently handle all your challenging UT inspections using the latest technologies including:

- **Full Matrix Capture (FMC)**
- **Real-Time High Resolution Total Focusing Method (TFM)**
- **64 Channel Code-Compliant Phased Array Ultrasound (PAUT)**
- **Time of Flight Diffraction (TOFD)**
- **Time Reversal Technique (TR) Option**

Whether you are inspecting complex composite materials or thick welds, TOPAZ64 delivers better coverage.

Driven by Industrially Proven UltraVision® Software.

ULTRAVISION
COMPLETE UT AND PHASED ARRAY INSPECTION PACKAGE

TOPAZ64 includes UltraVision Touch software onboard. This powerful, yet easy to use software controls the acquisition of Phased Array UT signals, displays real-time images and provides online and offline data analysis. UltraVision offers many advanced features for TOPAZ64 to improve Phased Array UT inspections, including industry leading FMC, real-time high resolution TFM, and post-processed TFM from recorded elementary A-Scan.

TOPAZ64 is Packed With Features for an Inspection Advantage.

- **Experience the Power.** 64/128PR phased array configuration and 2 separate conventional UT channels at 200 V.
- **Higher Resolution, Better Performance.** Best-in-class "live" TFM resolution delivering 65k points frame, up to 110 Hz. When higher resolution is needed, TOPAZ64 can generate 1M points frame. No other portable instrument can match this resolution. The 12" high-resolution multi-touch display can be operated with gloves and delivers unmatched image quality.
- **Improve Probability of Detection.** New bipolar pulsers provide more energy to punch through thick components.
- **Save Time and Money.** Save raw A-Scan data for record-keeping compliance or TFM post-processing without the need to rescan.
- **Use Less Equipment.** Supports 2D matrix arrays in pulse echo, pitch & catch or multiprobe configurations without the need for any external software.
- **Use in Demanding Environments.** Rugged, lightweight casing with no air intake.
- **Increase Uptime, Wherever You Go.** Battery operated and designed to accommodate two batteries in a hot swappable sequential discharge configuration.

Splitter Box Accessory *
Connect two PA probes at the same time for dual probe weld inspection configurations. (ZPAC and Omni versions available)

* Only available with 64/128PR version

Specifications

Specifications in this document are subject to change

FEATURE	TOPAZ 64
Size (H × W × D)	343 × 278 × 158 mm (13.5 × 10.9 × 6.2 in)
Weight (including one battery)	9.1kg (20.0 lb)
Multi-Touch Display	12.1 in. - 1024 x 728 pixels
Air Intake	No
Battery Operation	Yes
Phased Array Connector	ZPAC
Phased Array Channels	64/64P or 64/128PR
UT Channels	2 P/E or 2 P/C
Amplitude Resolution	16-bits
Measurement Gates	4 + 1 synchronization gate (peak, crossing, autocrossing)
Data Interfaces	Ethernet 1000 Base-T 1 x USB 3.0; 3 x USB 2.0
Maximum PRF	$\lesssim$ 40 kHz
Data Compression	1, 2, 4, 8, 16
Max. Applied Voltage (50 ohms)	150Vpp PA UT (Bipolar) /75V (Unipolar) / 200V UT
Bandwidth (-3 dB)	0.5 to 18 MHz PA 0.5 to 25 MHz UT
Rectification	Digital
Filtering	Analog / Digital (FIR)
Smoothing	Digital
Self-Check	Yes
Automated Probe Detection	Yes (with Zetec probe ID chip)
Automated Scanner Detection	Yes (with Zetec probe ID chip)
# Focal Laws	1024 with unlimited groups
TFM Frame Size	Up to 1M points
TFM Frame Rate	Up to 110 Hz (65k points frame resolution)
Maximum Number of Samples	16,384
Maximum Data File Size	2 GB ** Unlimited for raw A-Scan data
Encoder Interfaces	3 quadrature-type
Onboard Software	UltraVision Touch embedded
Serves as Protection Key	License for UltraVision Touch
Data Acquisition & Analysis (for remote data acquisition or off line postprocessing	UltraVision Touch UltraVision 3
Embedded Hard Drive	256 GB SSD
Video Output	HDMI
Instrument Calibration	Compliant with ISO 18563-1 / EN 12668-1

General Specifications

Voltage: 100 to 240 VAC
Frequency: 50 or 60 Hz
Maximum Power: 100 VA
Operating Temperature Range: -10°C to 45°C (14°F to 113°F)
Storage Temperature Range: -40°C to 70°C (-40°F to 158°F)
Relative Humidity: 80% non-condensing
CE mark is an attestation of the conformity with all applicable directives and standards of the European Community. The TOPAZ64 is an instrument of class 1 and installation category II.

Specifications included in this document are subject to change.

Environmental Tests

As per MIL-STD-810G
Cold Storage - 502.5 procedure I
Cold Operation - 502.5 procedure II
Heat Storage - 501.4 procedure I
Heat Operation - 501.4 procedure II
Temperature Shock - 503.5 procedure II
Vibration - 514.6 procedure I
Transit Drop - 516.6 procedure IV
Drop Test - IEC61010-1

Ordering Information

10056334 - ZPA-IUT-TOPAZ-64/64P
Fully integrated portable Phased Array system featuring up to 64 active channels on up to 64-element probe. This instrument can either use the same 64 transmitters and receivers or can be operated in PR mode using up to 32 channels as transmitters and 32 others as receivers for advanced inspections.

10056335 - ZPA-IUT-TOPAZ-64/64P-TFM
Fully integrated portable Phased Array system featuring up to 64 active channels on up to 64-element probe. This instrument can either use the same 64 transmitters and receivers or can be operated in PR mode using up to 32 channels as transmitters and 32 others as receivers for advanced inspections; 65K data points onboard, FMC/TFM capability.

10056328 - ZPA-IUT-TOPAZ-64/128PR
Fully integrated portable Phased Array system featuring up to 64 active channels on up to 128-element probe. This instrument can either use the same 64 transmitters and receivers or can be operated in PR mode using up to 64 channels as transmitters and 64 others as receivers for advanced inspections.

10056337 - ZPA-IUT-TOPAZ-64/128PR-TFM HR
Fully integrated portable Phased Array system featuring up to 64 active channels on up to 128-element probe. This instrument can either use the same 64 transmitters and receivers or can be operated in PR mode using up to 64 channels as transmitters and 64 others as receivers for advanced inspections, bipolar pulsers, 1M data points onboard, FMC/TFM capability.

10056338 - ZPA-IUT-TOPAZ-64/128PR-TFM HR-D
Fully integrated portable Phased Array system featuring up to 64 active channels on up to 128-element probe. This instrument can either use the same 64 transmitters and receivers or can be operated in PR mode using up to 64 channels as transmitters and 64 others as receivers for advanced inspections, bipolar pulsers, 1M data points onboard, FMC/TFM and raw A-Scan data saving capability.

Accessories Ordering Information

10056344 – ZPA-ACC-SPLTBOX64-ZPAC-2ZPAC64+4UT
ZPAC SPLITTER for TOPAZ64 with fast easy attachment system including a solid security latch. It can manage ID data from 2 Phased Array probes allowing UltraVision to recognize them. It includes two pairs of Lemo connectors (individually isolated with switches) to convert 2 Phased Array channels into 2 conventional channels.

10056345 - ZPA-ACC-SPLTBOX64-ZPAC-2OMNI64+4UT
Omni type SPLITTER for TOPAZ64 with fast easy attachment system including a solid security latch. The splitter includes two pairs of Lemo connectors (individually isolated with switches) to convert 2 Phased Array channels into 2 conventional channels.

Phased Array probes are connected to a solid Zero Insertion Force secured connector whereas 4 Lemo 00 connectors can be used simultaneously for pulse echo or TOFD inspections.

System purchase includes: TOPAZ64 unit with UltraVision Touch embedded, 2 batteries, 1 carrying case, 1 power cable (North America), 1 power cable (Europe), 1 AC adapter, 1 Ethernet cable, 1 USB Flash drive and user manual.

Time Reversal option can be added to any TOPAZ64 model.

CE

Zetec holds ISO 9001 and ISO/IEC 17025 certifications

ZETEC
THE INSPECTION ADVANTAGE

FOR MORE INFORMATION ABOUT TOPAZ64 OR OTHER ZETEC PRODUCTS CONTACT US AT info@zetec.com OR VISIT www.zetec.com.

www.zetec.com