

— **TOPAZ[®]64** —

Fully Integrated, Portable Phased Array UT & TFM Device

**ULTRA-INTELLIGENT
ULTRASOUND**

Now Available in 32 or 64 Channel Configuration!



Specifications

Specifications in this document are subject to change

TOPAZ ⁶⁴	
Size (H x W x D)	343 x 278 x 158 mm (13.5 x 10.9 x 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	32/128PR; 64/64PR 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	≤ 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

More Intelligent Inspections

Welcome to Ultra-Intelligent Ultrasound.

Introducing TOPAZ⁶⁴, a fully integrated, portable 32 or 64 channel Phased Array Ultrasonic Testing (UT) instrument delivering faster, more accurate inspections. It combines the power of 32 or 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) With up to 64 Elements
- Real-Time High Resolution Total Focusing Method (TFM)
- 32 or 64 Channel Code-Compliant Phased Array Ultrasound (PAUT)
- Time of Flight Diffraction (TOFD)
- Raw FMC Data Saving in Encoded Mode

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



Driven by Industrially Proven UltraVision[®] Software.

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.

Smart Features

TOPAZ⁶⁴ is Packed With Smart Features for an Inspection Advantage.







- **Experience the Power.** Fully integrated, portable unit from 32:128PR to 64:128PR phased array configuration and 2 separate conventional UT channels at 200 V. One platform for easy upgrade.
- **Better Performance.** Best-in-class “live” TFM resolution delivering 65k points frame, up to 110 Hz. TOPAZ⁶⁴ delivers the highest TFM acquisition frequency in its segment.
- **Higher Resolution.** TOPAZ⁶⁴ can generate 1M points frame. No other portable instrument can match this resolution.
- **Full Inspection in One Go.** With the multi-mode capability, TOPAZ⁶⁴ can support PA+TFM+TOFD at the same time and can also support TFM+TFM on the same or different probes.
- **Save Time and Money.** Save raw A-Scan data for record-keeping compliance or TFM post-processing without the need to rescan.
- **Improve Probability of Detection.** New bipolar pulsers provide more energy to punch through thick components.
- **Use Less Equipment.** Supports 2D matrix arrays in pulse echo, pitch & catch or multiprobe configurations without the need for any external software.
- **Easy to Use.** The 12” high-resolution multi-touch display can be operated with gloves and delivers unmatched image quality.
- **Ideal for 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.



Adaptable to Meet Your Needs



Stay connected and productive

-  USB 3.0 and 2.0 ports
-  Ethernet 1000 Base-T
-  Wi-Fi
-  High Speed Data Link
-  256GB SSD
-  HDMI video output



SPLITTER BOX ACCESSORY

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

Your Inspection Needs Covered, Challenges Met. TOPAZ

The highly flexible TOPAZ⁶⁴ completes the TOPAZ family of portable integrated Phased Array ultrasonic instruments. From the unmatched value of TOPAZ¹⁶ and the redefined performance of TOPAZ³² to the ultra-intelligent TOPAZ⁶⁴, you'll quickly agree your needs will be covered, challenges met.

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.

Ordering Information

10059419 - ZPA-IUT-TOPAZ-32/128PR-TFM

Fully integrated portable Phased Array system featuring up to 32 active channels on up to 128-element probe. This instrument can either use the same 32 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, bipolar pulsers, 256K data points onboard, FMC/TFM capability.

10056334 - ZPA-IUT-TOPAZ-64/64PR

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, bipolar pulsers.

10056335 - ZPA-IUT-TOPAZ-64/64PR-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, bipolar pulsers, 256K 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.

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

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.

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

 Zetec holds ISO 9001 and ISO/IEC 17025 certifications

