ZETEC

TOPAZ32 FULLY INTEGRATED PHASED ARRAY UT DEVICE WITH MULTI-TOUCH SCREEN

PERFORMANCE AND PRODUCTIVITY REDEFINED

www.zetec.com/topaz

High-Performance Phased Array UT at Your Fingertips

Feature	TOPAZ®32
Size (H × W × D)	5.2 × 10.3 × 12.8 in (13.2 × 26.0 × 32.6 cm)
Weight	13.9 lb. (6.3 kg)*
Multi-Touch Display	10.4 in. - 1024 x 728 pixels
Air Intake	No
Battery Operation	Yes (hot swap)
Phased Array Connector	ZPAC connector (custom ZIF with latch)
Phased Array Channels	32/128 P or 32/128 PR
UT Channels	2 P/E or 2 P&C
Digitizing Frequency	Up to 100 MHz
Amplitude Resolution	16 bits
Measurement Gates	4 gates + 1 synchronization gate
Data Interfaces	Ethernet 1000 Base-T 1 x USB 3.0 3 x USB 2.0
Maximum PRF	12 kHz
Global Data Throughput	Up to 10 MB/sec
Max. Pulser Voltage (Open Circuit)	105V PA UT / 215V UT
Max. Applied Voltage (50 ohms)	75V PA UT / 200V UT
Bandwidth (-3 dB)	From 0.5 to 18 MHz
Real-time Data Compression	Yes
Rectification	Digital
Filtering	Analog/digital (FIR)
Smoothing (Video Filter)	Digital
Self-Check	Yes
Automated Probe Detection	Yes
Dynamic Depth Focusing (DDF)	Yes
Time Reversal	Yes **
# Focal Laws (DDF)	1024
Maximum Number of Samples	8,192 - 16,384 (remote - UltraVision® 3)
Maximum Data File Size	2 GB onboard - 20 GB (remote using UltraVision® 3)
Encoder Interfaces	2 quadrature-type
PC Software Control	UltraVision Touch™ embedded
Serves as Protection Key	License for UltraVision Touch™
Data Acquisition & Analysis	UltraVision Touch™ UltraVision® 3
Embedded Hard Drive	120 GB SSD
Video Output	DVI (digital and analog)
Instrument Calibration	Compliant with ISO 18563-1

* With one (1) battery
** Time Reversal is not a standard feature in TOPAZ32.
See Ordering Information section for product details.

General Specifications

- Voltage: 100 VAC or 240 VAC
- Frequency: 50 Hz or 60 Hz
- Maximum power: 100 VA
- Operating temperature range:
  0°C to 45°C (32°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 conformity with all applicable directives and standards of the European Community. TOPAZ is an instrument of class 1 and installation category II.

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

Ordering Information

ZPA-IUT-TOPAZ-32/128PR-x64-KIT
Fully integrated portable Phased Array system featuring up to 32 active channels on up to 128 element probes. This instrument can use the same 32 transmitters and receivers or can be operated in PR mode using up to 32 channels as transmitters and 32 other receivers for advanced inspections. Phased Array probes are connected on a solid Zero Insertion Force secured connector, whereas 4 Lemo 00 connectors can be used simultaneously for pulse echo or TOFD inspections.

ZPA-IUT-TOPAZ-32/128P-x64-KIT
Fully integrated portable Phased Array system featuring up to 32 active channels on up to 128 element probes for enhanced inspection capabilities. Phased Array probes are connected on a solid Zero Insertion Force secured connector, whereas 4 Lemo 00 connectors can be used simultaneously for pulse echo or TOFD inspections.

ZPA-IUT-TOPAZ-32/128PR-x64-TR-KIT
Fully integrated portable Phased Array system featuring up to 32 active channels on up to 128 element probes. This instrument can use the same 32 transmitters and receivers or can be operated in PR mode using up to 32 channels as transmitters and 32 other receivers for advanced inspections. Phased Array probes are connected on a solid Zero Insertion Force secured connector, whereas 4 Lemo 00 connectors can be used simultaneously for pulse echo or TOFD inspections. Onboard Time Reversal function capability.

System purchase includes: TOPAZ32 unit with UltraVision Touch™ embedded, 2 batteries, 1 power adaptor, 1 carrying case, 1 power cable (North America), 1 power cable (Europe), 1 AC adapter, 1 Ethernet cable and user manual.

SINCE ITS LAUNCH, TOPAZ HAS SET A NEW STANDARD FOR PORTABLE PHASED ARRAY UNIT PERFORMANCE.

THE NEW TOPAZ32 REDEFINES PRODUCTIVITY, MAKING IT A SMART INVESTMENT.

TOPAZ32 DELIVERS SPEED AND ONBOARD PROCESSING POWER TO ALLOW FOR LARGER ONBOARD DATA FILES, FASTER ANALYSIS AND SPECIAL NEW TOOLS. PLUS, TOPAZ NOW SUPPORTS 2D DUAL MATRIX PROBES.

Run it with a touch

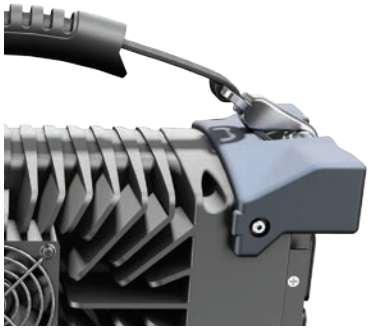
A revolutionary user experience. Interaction is very intuitive and similar to a smartphone or tablet. Navigate the interface easily, smoothly and efficiently.

Ultra-bright multi-touch display

The high-resolution, ultra-bright multi-touch display can be used indoors or outdoors. Resolution is 64% better than standard displays. The optimized format offers 33% more surface than 16:9 displays with the same diagonal. The dedicated outdoor setting delivers amazing visibility.

Faster Processing Time

New 64 bit onboard computer delivers extra computing power and reduces processing time by a factor of two improving operation fluidness of the instrument.



No air intake

The TOPAZ32 housing is designed so there is no air intake. The removable external fan optimizes heat dissipation. The closed housing design prevents dust, humidity or contamination from getting inside, making it a true field-ready instrument.

Portability

Weighs only 6 kg in a robust magnesium housing.

Connectivity

Connectivity ports 1 USB 3.0, 3 USB 2.0 and gigabyte LAN.

UT channels 2 high-quality UT channels for conventional UT (pulse echo, pitch-and-catch or TOFD).

Quality PAUT connector with a solid probe latch Features a robust connector for fast, easy and low-noise probe connections with a secure, solid latch.

FULLY-INTEGRATED INSPECTION PROCESS

1 PREPARATION

The visual feedback of the on-board shape editor and advanced focal law calculator allows easy setup creation and optimization. Setups for 1D or 2D probes can be created using TOPAZ32 embedded tools.

2 ACQUISITION

The calibration process is made easy with a complete calibration tool. Superior hardware specifications allow for the most efficient encoded data acquisition process of any portable PA system on the market.

IMPROVE YOUR PRODUCTIVITY

Onboard focal law calculator

The advanced calculator enables inspections on complex specimens like axial or circumferential welds, including different weld profiles. It also supports 2D matrix arrays probes without any additional external software.
No inspection job is too difficult.

High performance in acquisition and processing

TOPAZ32's 2-GB data file size improves the efficiency of the inspection of large components. Create as many inspection groups as needed with up to 1024 focal laws. Multiple data files can be merged together using the "File Merger" tool. C-Scan data from different files can be consolidated with the "Data Stitching" tool. No inspection job is too large.

16-bit amplitude resolution

Signals can be digitized using an 800% FSH scale reducing the chances of re-scan due to signal saturation during the acquisition. Complete the inspection right the first time.

Improved data acquisition speed

64-bit computing power combined with an onboard SSD (solid-state drive) allow users to perform challenging inspections with large data files without compromising acquisition speed.

Faster analysis

TOPAZ32 capability allows for 2 times faster data processing and analysis compared with previous versions. Regardless of size, data files can be stored for quick access, reducing processing time.

UltraVision® touch software embedded

The embedded advanced focal law calculator with visual feedback allows for easy setup preparation. Onboard volumetric merge and measurement tools enable powerful data analysis and inspection report generation. Leverage one single software platform across the entire family of UT products.

3

ANALYSIS

A full set of basic (cursors, readings) and advanced (merge, C-Scan stitching, gate selectors, volumetric contour, thickness thresholding, etc.) analysis tools are available on-board with fully-configurable display layouts.

4

REPORTING

Ready-to-print custom PDF reports, including hardware settings, scan plan and indication information, are generated in a single touch. Keep paperwork to a bare minimum.

2D matrix arrays

UltraVision Calculator now supports 2D matrix array probes without using any external software. Unlock the power of matrix array probes with TOPAZ**32** tools. Complex inspections have never been easier.

Compound scanning

Sectorial and linear scanning combine to increase the covered inspection area while reducing scanning time.

Time reversal support

TOPAZ**32** is the first portable instrument to support TIME REVERSAL techniques for inspecting composite materials. Amazing power in a small box**.

Seamless integration

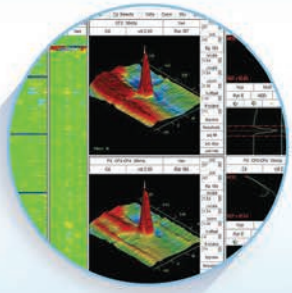
Connect any Zetec scanner or probe to TOPAZ**32**, and it will automatically recognize and preconfigure accordingly. Probes can be tracked throughout the inspection process, ensuring data integrity and traceability.

Image generated with UltraVision® 3 and 3D package

A Global Leader in

NDT Solutions

INSTRUMENTS



SOFTWARE

PROBES & WEDGES

MECHANICAL SYSTEMS

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

Zetec holds ISO 9001 and ISO/IEC 17025 certifications

ZETEC
THE INSPECTION ADVANTAGE

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