

# TOPAZ<sup>®</sup>16

Portable Phased Array UT Instrument



# PERFECT PAUT INSTRUMENT FOR THIN WELD AND CORROSION INSPECTIONS

TOPAZ®16 is a 16-channel, portable phased array ultrasonic testing, or PAUT, device for non-destructive testing (NDT) projects. TOPAZ16 delivers best-in-class productivity with unmatched value.

## Built to Go Anywhere

TOPAZ16 is compact and lightweight in a robust aluminum casing with no air intake. The full metallic housing improves durability and thermal transfer efficiency. Plus, the unit weighs only 4.5 kg (10 lbs).

With a leading-class operating temperature range, 264 mm (10.4 in) high-resolution multi-touch display, and hot-swappable batteries, TOPAZ16 is built to meet a wide range of inspection demands regardless of the environment.

TOPAZ16 portable 16 channel phased array is available in two versions:

- 16/64 – Featuring up to 16 active channels on up to 64 element probes.
- 16/128 – Featuring up to 16 active channels on up to 128 element probes for enhanced inspection capabilities.

## Unmatched Value

TOPAZ16 delivers big value in a small footprint. From preparation to reporting, TOPAZ16 is the complete solution. This fully integrated and simplified approach can reduce the amount of equipment needed to perform an inspection.

TOPAZ16 can handle all steps in an inspection process, helping to lower costs thanks to:

**Preparation:** Specimen editor and focal law calculator helps make setups simple.

**Acquisition:** Highly efficient and reliable data acquisition process.

**Analysis:** Full suite of basic and advanced tools for a more efficient and effective analysis.

**Reporting:** Ready to print standard or customizable reports in a touch.



<https://a3-eng.com/>

# SIZED FOR CONVENIENCE. BUILT TO PERFORM.

With class leading software capabilities, temperature operating range, multi-touch screen, IPEX connector and proven Zetec quality.

## Benefits

- Phased array up to 16/128 with 1x conventional UT channel
- Multiple probe capability with splitter (2x PA+ 2x TOFD)
- Unlimited groups
- Up to 256 focal laws
- Maximum PRF of 12kHz
- Available with ZPAC or IPEX connector

## Powered by UltraVision Software

TOPAZ16 includes this powerful software onboard. Leverage a single software platform across the entire family of Zetec UT products, saving valuable training time and enabling new levels of system synergies. Benefit from powerful features including:

- Embedded advanced focal law calculator with visual feedback.
- Onboard volumetric merge and measurement tools.
- Interactive help onboard the instrument.
- Remote control capabilities.

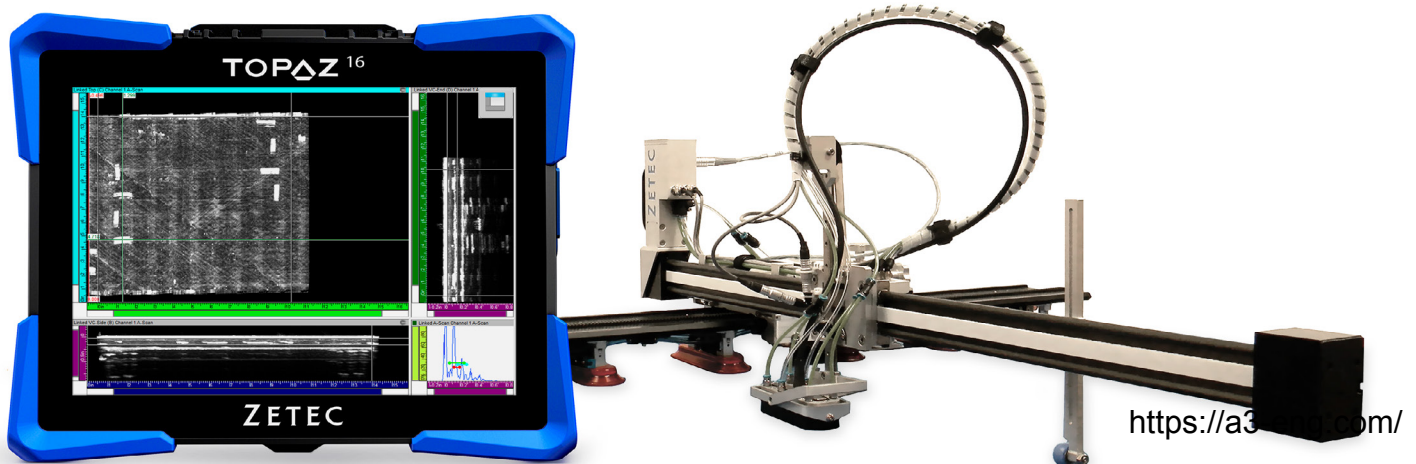
## Applications

- Thin weld multi-probe configurations
- Corrosion mapping
- Composite inspections
- Encoded or manual inspections
- Complex component inspections

## Seamless Setup with Zetec Scanners and Probes

When any Zetec scanner such as the award-winning NDT PaintBrush, Weld Crawler, or probe is connected, TOPAZ16 can automatically recognize and preconfigure the inspection sequence accordingly, saving valuable time.

- Multiple scanning configurations: sector, linear, and compound.
- One dedicated UT channel: a separate conventional UT channel offers 200v pulser and works in P/E or P/C configurations for TOFD examinations.
- IPEX and ZPAC connector options available.



TOPAZ16 and FlexTrack XY Scanner, are the ideal solution for composite inspection in the Aerospace industry.

# SPECIFICATIONS

## INSTRUMENT

Dimensions (W x H x D)	271 x 221 x 120 mm (10.6 x 8.7 x 4.7 in)
Weight with 1 battery	4.5 kg (10 lb)
Multi-touch display	264 mm (10.4 in) wide, 1024 x 768 pixels
Air intake	No
Hot swappable batteries	Yes
Storage	256 GB SSD
Data interfaces	Ethernet 1000 Base-T, 1x USB 3.0, 2 x USB 2.0
Video output	HDMI
Phased Array connector	ZPAC or IPEX
Instrument calibration	Compliant with ISO 18563-1/EN 12668-1

## ENVIRONMENTAL

IP rating	Designed for IP66
Operating temperature	-10C to 45C (14F to 113F), with external fan kit: up to 53C (127F)
Storage temperature range	-40C to 70C (-40F to 158F)
Relative humidity	80% non-condensing

## PHASED ARRAY

Phased Array Channels	16/64 or 16/128
UT Channels	1 P/E or 1 P/C
Amplitude Resolution	16 bits
Measurement Gates	4 + 1 synchronization gate
Maximum PRF	12 kHz
Data Compression	1, 2, 4, 8, 16
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
Rectification	Digital
Filtering	Analog/Digital (FIR)
Smoothing (Video Filter)	Digital
Self-Check	Yes
Automated Probe Detection	Yes (with Zetec probe ID chip)
Automated Scanner Detection	Yes (with Zetec ID chip)
Focal Laws	256
Maximum Number of Samples	8,192
Maximum Data File Size	300MB for 16/64 version, 700MB for 16/128 version
Encoder Interfaces	2 quadrature-type