



# — TOPAZ<sup>®</sup>16 —

Best in Class Fully Integrated 16 channel Phased Array UT Device

# SMALL SIZE BIG VALUE



## Specifications

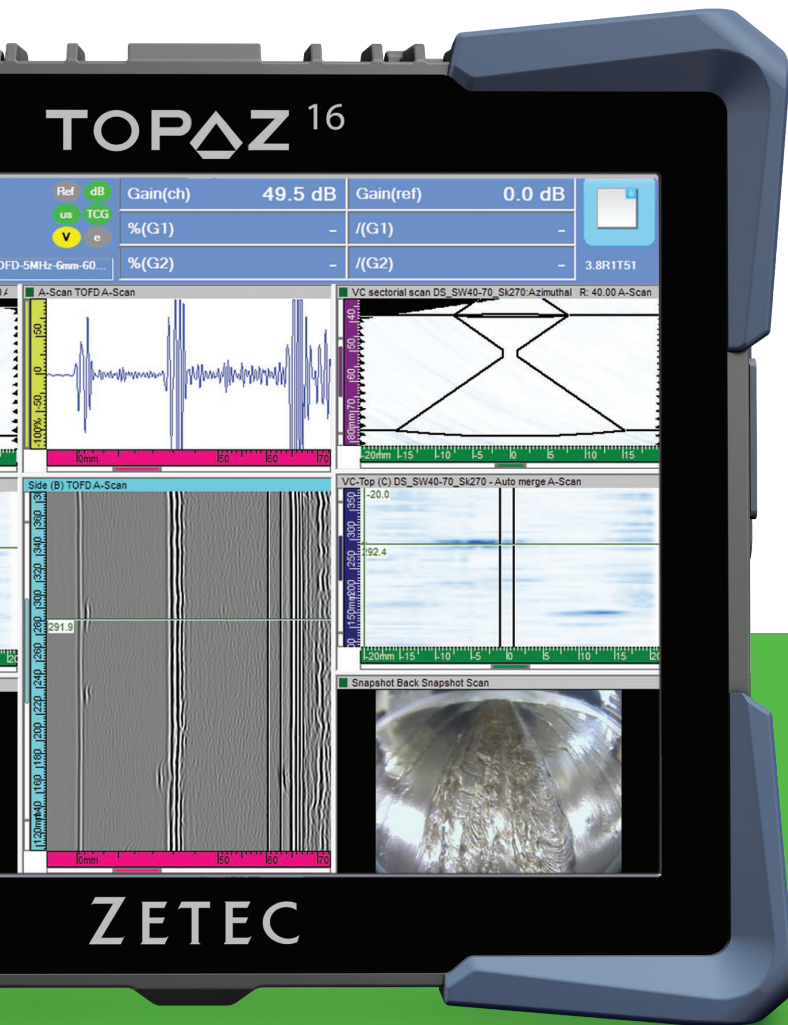
FEATURE	TOPAZ 16
Size (H x W x D)	221 x 271 x 120 mm (8.7 x 10.6 x 4.7 in)
Weight (including one battery)	4.54 kg (10.0 lb)
Multi-Touch Display	10.4 in. - 1024 x 728 pixels
Air Intake	No
Battery Operation	Yes
Phased Array Connector	ZPAC
Phased Array Channels	16/128 or 16/64
UT Channels	1 P/E or 1 P/C
Amplitude Resolution	16 bits
Measurement Gates	4 + 1 synchronization gate
Data Interfaces	Ethernet 1000 Base-T 1 x USB 3.0 2 x USB 2.0
Maximum PRF	12 kHz
Data Compression:	1, 2, 4, 8, 16
Max. Pulsed 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 probe ID chip)
# Focal Laws	256
Maximum Number of Samples	8,192
Maximum Data File Size	300 MB for 16/64 700 MB for 16/128
Encoder Interfaces	2 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

# Best in Class Productivity

Since its launch, TOPAZ® has set a new standard for portable Phased Array unit performance. Now the TOPAZ family gets bigger. Introducing TOPAZ<sup>16</sup>, the best in class, fully integrated 16 channel phased array UT device. TOPAZ<sup>16</sup> delivers big value in a small footprint offering best-in-class features including:



- **UltraVision® Touch software embedded.** TOPAZ<sup>16</sup> includes UltraVision Touch software onboard. Leverage one single software platform across the entire family of UT products. 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 capability with UltraVision Touch
- **Best in class operating temperature range for added flexibility.** TOPAZ<sup>16</sup> is built to meet your specific demands regardless of the environment.
- **Multi-probe and multi-group support.** With the 16/128 version, weld inspections are easy by simply adding a probe splitter accessory. The 16/64 version offers multi-group support (one probe type at a time).
- **10.4" high resolution multi-touch display.** TOPAZ<sup>16</sup> features a very wide, highly responsive multi-touch screen that offers the best resolution in its class.

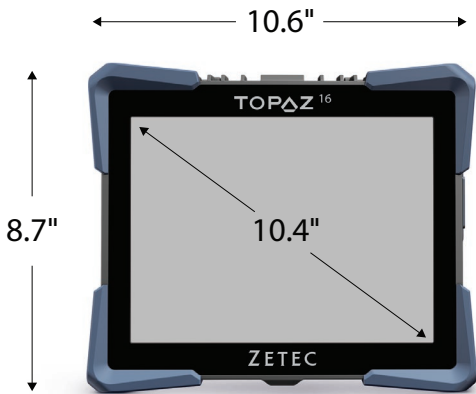


## HANDLES APPLICATIONS WITH EASE

TOPAZ<sup>16</sup> is sized for convenience and built to perform. With proven Zetec quality and innovation, TOPAZ<sup>16</sup> is ideal for the most common inspection applications including:

- Weld inspection
- Corrosion mapping
- Encoded or manual inspection
- Inspection of complex components and more

# Unmatched Value



**Big Screen. Small Footprint.**

**Delivers a Fully Integrated Inspection Process.** TOPAZ<sup>16</sup> is capable of handling all steps in an inspection process helping to lower costs:

**Preparation:** Specimen editor and focal law calculator means easy setup

**Acquisition:** Features that deliver a highly efficient data acquisition process

**Analysis:** Full suite of basic and advanced analysis tools onboard

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

**Built to Go Anywhere.** TOPAZ<sup>16</sup> is compact and lightweight in a robust aluminum casing with no air intake. The full metallic housing improves robustness, thermal transfer efficiency and weighs only 4.5 kg (10 lb).



- 1 Dedicated UT Channel.** A separated conventional UT channel offers 200V (at 50Ω) pulser and works in P/E or P/C configurations for TOFD examinations.
- More Uptime with a Hot Swap Battery Capability.** Designed to accommodate two batteries in a hot swappable sequential discharge configuration.
- Fast and Safe Data Transfer.** TOPAZ<sup>16</sup> features an internal solid state drive (SSD) for quick, reliable data transfer and storage during operation.
- High Signal Quality and Less Chance of Saturation.** Digitizing up to 800% and 16-bit amplitude resolution.
- Easy, Seamless Setup with Zetec Probes and Scanners.** When any Zetec scanner such as NDT PaintBrush, Weld Crawler or probe is connected, TOPAZ<sup>16</sup> automatically recognizes and preconfigures the inspection sequence accordingly, saving valuable time. Also works with other scanners and probes.
- More Flexibility to Meet Your Needs.** TOPAZ<sup>16</sup> offers multiple scanning configurations: sector, linear and compound.

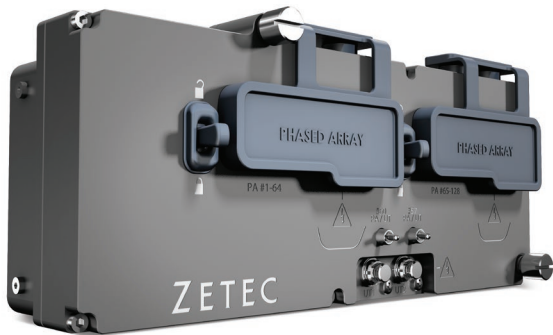


**Numerous Connectivity Options. TOPAZ<sup>16</sup> has the Network Connectivity Options you Need.**

- 1 USB 3.0 (10x faster than 2.0), 2 USB 2.0 and gigabyte LAN, HDMI
- UT channel: 1 high-quality UT channel for conventional UT (pulse echo, pitch-and-catch or TOFD)
- Quality PA UT connector with a solid probe latch

# Adaptable to Meet Your Needs

## TOPAZ<sup>16</sup> Accessories



**Probe Splitter:** connect two PA probes at the same time for dual probe weld inspection configurations. The probe splitter is available in two different versions: ZPAC and Omni type probe connectors.



**Fan Kit:** extends the temperature operation range of the unit enabling TOPAZ<sup>16</sup> to fully operate in environments where no other instrument in its class can.

## Available in Two Versions

- TOPAZ<sup>16</sup> 16/64P
- TOPAZ<sup>16</sup> 16/128P

TOPAZ<sup>16</sup> is future proof: Upgradeable from 16/64 to 16/128 through a software update. No need to send the product to Zetec.

	Feature	16/64	16/128
Configuration	Conventional UT	One Probe Type at a time	Simultaneous
	TOFD		
	Phased Array		



## 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)

Operating Temperature Range with External Fan Kit:  
-10°C to 53°C (14°F to 127°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 TOPAZ<sup>16</sup> is an instrument of class 1 and installation category II.

## Ordering Information

### 10053724 - ZPA-IUT-TOPAZ-16/64P-KIT

Fully integrated portable Phased Array system featuring up to 16 active channels on up to 64 element probes. Phased Array probes are connected on a solid Zero Insertion Force secured connector whereas 2 Lemo 00 connectors can be used for pulse echo or TOFD inspections.

### 10053725 - ZPA-IUT-TOPAZ-16/128P-KIT

Fully integrated portable Phased Array system featuring up to 16 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 2 Lemo 00 connectors can be used simultaneously for pulse echo or TOFD inspections.

*System purchase includes: TOPAZ<sup>16</sup> 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.*

## 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

## Accessories Ordering Information

### 10053569 - ZPA-ACC-SPLTBOX16-ZPAC-2ZPAC64+2UT

ZPAC SPLITTER for TOPAZ<sup>16</sup> with fast easy attachment system including a solid security latch. It can manage ID data from 2 Phased Array probes allowing UltraVision to track them. It includes one pair of Lemo connectors (individually isolated with switches) to convert Phased Array lines into one Conventional Channel.

### 10053781 - ZPA-ACC-SPLTBOX16-ZPAC-2OMNI64+2UT

Omni type SPLITTER for TOPAZ<sup>16</sup> with fast easy attachment system including a solid security latch. The splitter includes one pair of Lemo connectors (individually isolated with switches) to convert Phased Array lines into one Conventional Channel.

### 10053374 - ZPA-ACC-TOPAZ16-FANEXT-ASSY

Fan Kit for TOPAZ<sup>16</sup>. It extends the instrument operating temperature range. Easily attached at the back of the unit without any tools and automatically controlled by TOPAZ<sup>16</sup>.

FOR MORE INFORMATION ABOUT TOPAZ<sup>16</sup> OR OTHER ZETEC PRODUCTS  
CONTACT US AT [info@zetec.com](mailto:info@zetec.com) OR VISIT [www.zetec.com](http://www.zetec.com).



Zetec holds ISO 9001  
and ISO/IEC 17025  
certifications

