

ETHer ETHerCheck Combined Eddy Current & Bond Testing Flaw Detector



The ETHerCheck is a combined Eddy Current and Bond Testing Flaw Detector which comes with a rich range of features offered by a best in class eddy current flaw detector combined with the most widely used acoustic bond testing method – Pitch-Catch.

All functions are in a single lightweight instrument with a common user interface between the two modes, resulting in simple operator led set-up.

Features:

- General Eddy Current, plus Rotary, plus Conductivity, plus Pitch-Catch.
- “Two instruments in one”.
- The leading features of the best in class AeroCheck+ Eddy Current Flaw Detector combined with excellent Pitch-Catch functionality.
- Pitch-Catch dry coupled bond testing mode allows rapid detection of defects in laminate, bonded and sandwich structures.
- Automatic test frequency optimization
- Waveform, time-base and phase / frequency plots.



The ETHERCHECK Pitch-Catch Probe offers the best in design and durability. Ergonomically designed and manufactured from CNC-machined Aluminum with rubber hand grips, the ETHERCHECK Pitch-Catch probe is both comfortable to use and suitably robust.

The transmitter and receiver sensor guide feet can be positioned by the operator to suit the inspection task. The transmit and receive probe tips are interchangeable with rounded and flat tip profiles available.

The sensors are positioned close to the edge of the housing to allow inspection in tight areas.

The ETHERCHECK Pitch-Catch Probe offers Automatic Probe ID by storing its own default settings which can be programmed by the operator. The ETHERCHECK also works with other manufacturers probes.



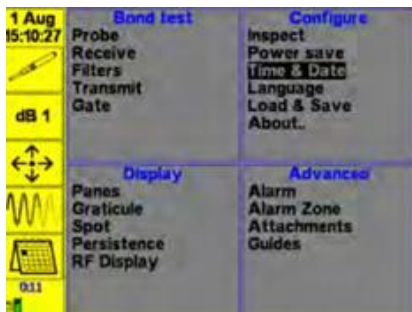
Bond Testing Applications

Bond Testing sees a wide range of applications in modern composite structures with materials such as carbon fiber, honeycomb and Nomex. In addition, glued / bonded joints may be inspected for integrity of adhesion.

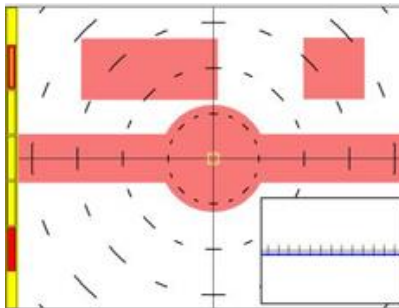
Applications	Capability
CFRP skin to fiber / metal honeycomb near disbond	Best
CFRP skin to fiber / metal honeycomb core crush	Best
Honeycomb structure impact damage	Best
CFRP skin to fiber / metal honeycomb far disbond	Good
Bonded stiffener disbond	Good
GRP skin to foam or wood core	Good
Multi-layer CFRP laminate delaminations, voids	Fair
Metal to metal bonded skins	Fair

Simplicity, Clarity & Accuracy in Bond Testing Mode

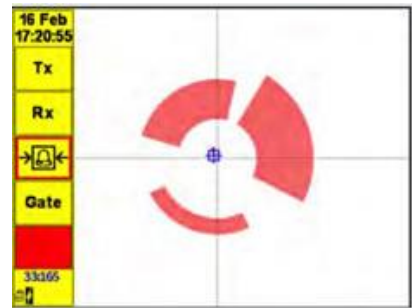
The screens for the Bond Testing mode of the ETherCheck have a familiarity with the screens of the AeroCheck+. By doing this, we are able to make moving between the eddy current and bond testing modes seamless, simple and intuitive.



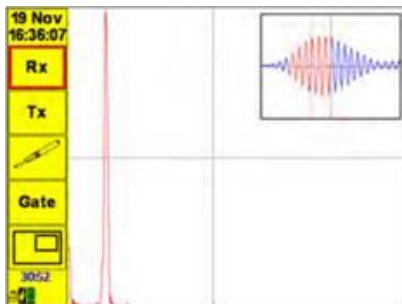
Bond Test Mode Menu System



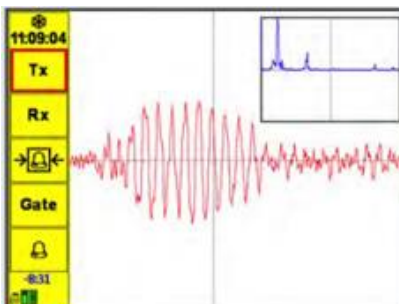
Multiple Box, Rectangle and Circular Alarm Gates plus inset RF Full Screen



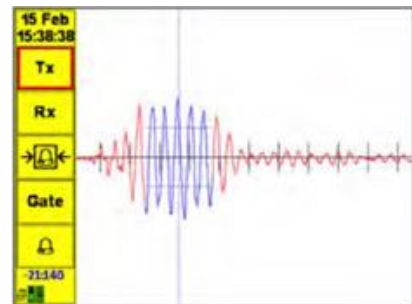
Impedance Plane (XY) Trace with multiple sector gates



Frequency Spectrum Plot with Inset RF Trace showing Gate Area



RF (A-Scan Waveform) with Frequency Spectrum Inset



RF Waveform with gate region highlighted

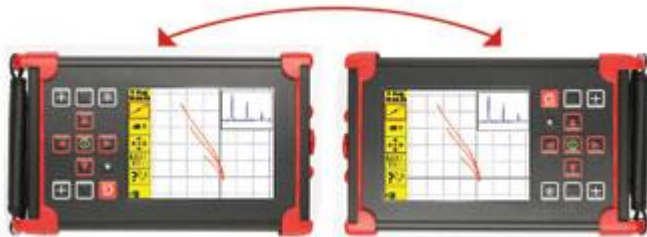
Industry Standard Probe Connectors

The ETHERCheck in AeroCheck+ mode uses a wide range of eddy current probes meeting all the needs of the aerospace eddy current inspector. Absolute, Bridge and Reflection connected probes can use the industry standard 12 Way Lemo Connector. A Lemo 00 Connector is also provided for simpler connection of Absolute probes.



Wide Frequency Range

The ETHERCheck offers the dual frequency, the single frequency range of 10Hz to 20MHz, and the dual frequency range of 10Hz to 12.8MHz, ensuring a diverse range of real world applications can be met.



Works the Way You Do!

The ETHERCheck has the ability to be used in left and right-handed mode thanks to the "Auto-Flip" function. This is especially useful if the operator is inspecting in a restricted area like the Engine Mounts.

Lightweight, Rugged, "Sure Grip" & Enhanced Protection

Weighing just 2.7 lbs. (1.2kg), housed in a tough aluminum alloy Mg Si 0.5 powder-coated outer case and fitted with rubber feet to aid grip, the AeroCheck is as stable on a wing of an aircraft as it is on a lab bench.

Both instruments have two integrated molded "Sure Grip" handles on the rear of the case.

The ETHERCheck has enhanced durability through a fully-fitted, custom-designed outer "protective boot" and integral hand-strap for even greater strength and easier grip in use.



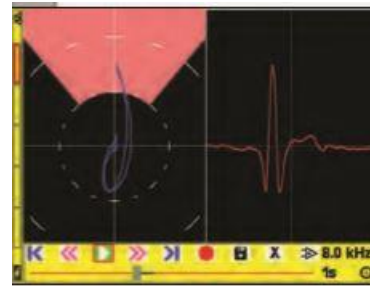


Daylight Readable, Clear, Large, Configurable Color Screen

The ETherCheck has a large 5.7" (14.5 cm) LCD Color Screen of 640 x 480 pixels providing the Operator with excellent signal resolution and presentation and with the choice of configuring their own color schemes and display types. It is easy to optimize the screen presentation regardless of the light conditions and it is possible to view a choice of up to two Spot, Time-Base, Waterfall or Meter display types. Not all NDT inspection on aircraft takes place in the comfort of an aircraft hangar so the daylight readable display is easily viewable outdoors.

Record and Replay

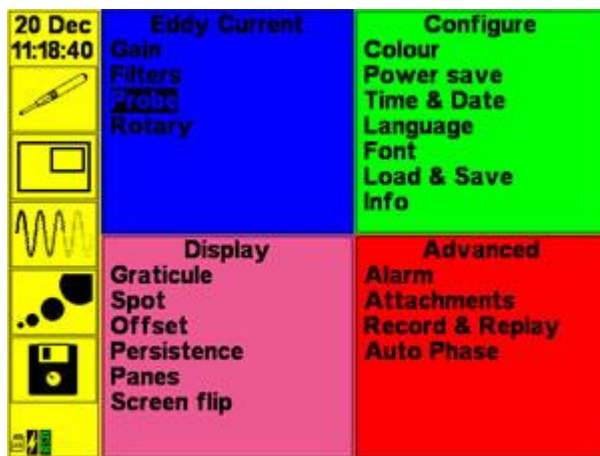
Up to 164 seconds of live data may be recorded in real-time and then played back either on the instrument or on a PC using the desktop application ETherAnalyser for subsequent analysis and review. The recorded data may be further optimized by adjusting many settings including Phase, Gain, Filters, Display and Spot positions.



Easy to Use Menus & Icon System

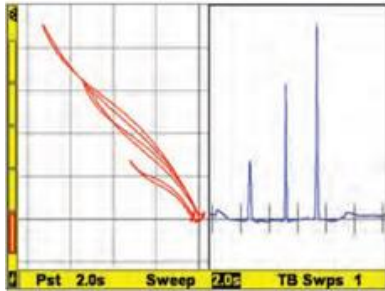
The ETherCheck menu system is simple and fast to navigate with the ability to add individually selectable soft key menu items to the sidebar as recognizable icons for rapid function access and a "quick-setting menu" for easy set-up, review and adjustment.

With four operator-selectable keys and a fifth slot for the last menu function used, Technicians can quickly modify the system with their preferences. Each saved instrument setting can be associated with a unique, single press set of quick access soft keys. There are also two front panel hard keys that can be readily programmed for rapid single press access to frequently used functions.

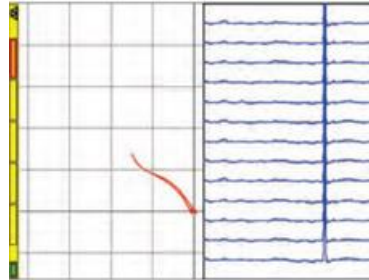


“The ETherCheck offers the right mix of features for any Eddy Current application needed plus bond testing abilities in an easy-to-use package designed entirely with the end user in mind”.

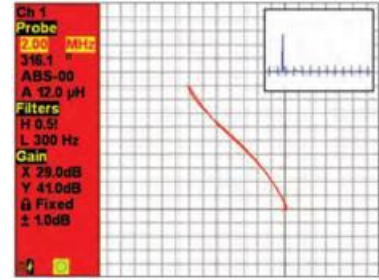
Exceptional Screen Clarity for Any Eddy Current Application



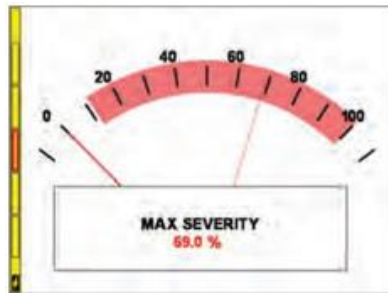
50 / 50 XY & Timebase



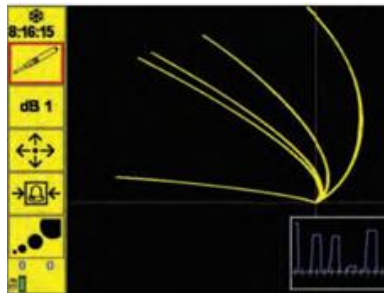
50 / 50 XY Waterfall with 12 2s time sweeps



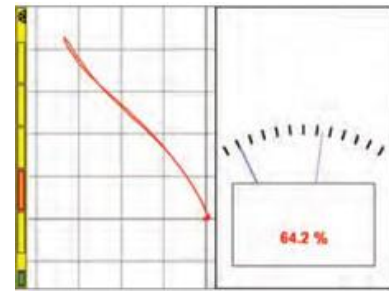
XY with small timebase and Quick Menu



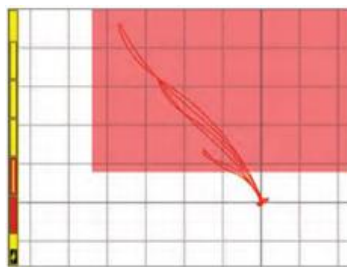
Meter Full Screen



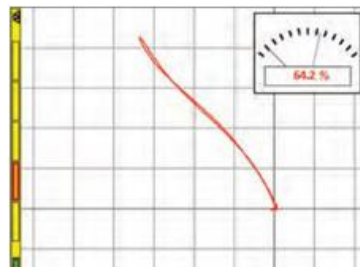
Dark background polar graticule and soft-keys



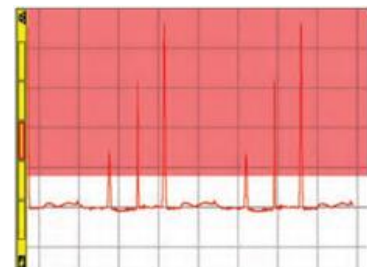
XY and Meter 50 / 50



XY Full Screen with Box Alarm



XY with Small Meter



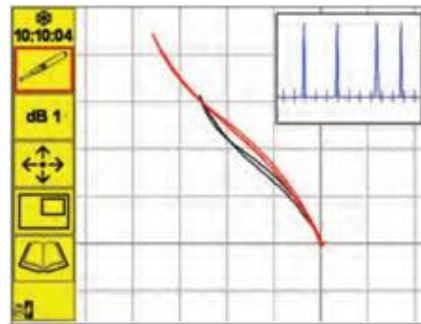
Timebase Full Screen with level arm

AeroCheck+ Key Features



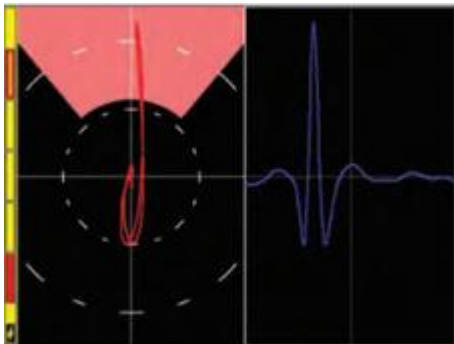
Guides Feature: "Guides" allows the user to display a slide show that can be created

easily with commonly used desktop software. Instructions, tutorials and procedures for an inspection can be added to the AeroCheck+ very quickly and the NDT inspector can easily switch between the inspection itself and the "Guides" while performing a live test.



Trace Feature: The trace function allows a reference trace to be stored on the screen and appears along with the

graticule behind the live spot. This allows the operator to readily compare the live data with the reference calibration.

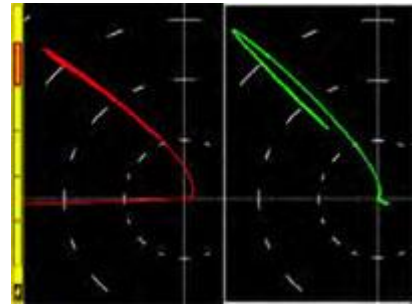


Rotary Capabilities as Standard:

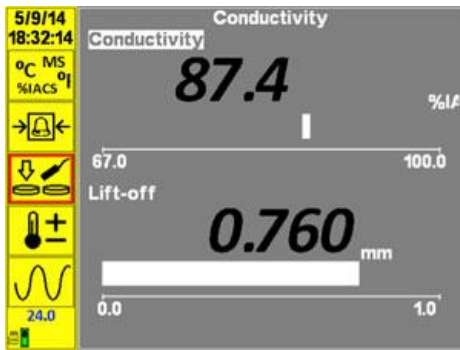
The AeroCheck series includes rotary capabilities as standard and can be used with the ETher Mercury (mini) ARD002, Hocking 33A100 or the Rohmann MR3 / SR1 and SR2 Drives (with special adapter cable).

"Loop Feature": "Loop" is a convenient way of capturing a short live, repetitive signal and then optimizing the instrument settings through real time adjustments of the Phase, Gain, Balance, Filters and Display Configuration in order to simplify the task of optimizing the parameters. The "Loop" function is excellent for calibration set up especially for setting the filters for Rotary and Dual Frequency mix.

Dual Frequency Feature: At different frequencies, different signal indications (e.g. lift off and defect) have a different relative phase and amplitude response. By means of Phase Rotation and Gain change of the X Y signal components, one of these indications can be manipulated to be almost identical in phase and amplitude as the other and then by subtraction (mixing), the unwanted component is minimized, giving an improved detection of the required signal.



Auto-Mix Feature: A dual frequency mix exploits the phase and sensitivity change between two different types of indication to suppress one and enhance the other. Auto-Mix simplifies the complex procedure of mixing two different frequency signals and can be achieved on the AeroCheck+ through a series of easy steps. Once set up, the Auto-Mix itself is as simple as pressing one key.



Conductivity Measurement: Many of the Aerospace procedures require that Conductivity Measurement is available on the designated Eddy Current Flaw Detector. When connecting the Conductivity Probe, the AeroCheck+ auto-detects the probe and seamlessly switches into conductivity mode. Removal of the probe switches the instrument back to flaw detector mode.

NB: The conductivity Measurement option is available through the purchase of the KACON001 Kit.

The Standard ETHERCheck Kit Includes:

- ETHERCheck Unit
- Power Adapter
- Shoulder Strap
- Soft Carrying Case
- USB Cable
- Quick Reference Guide
- Manual