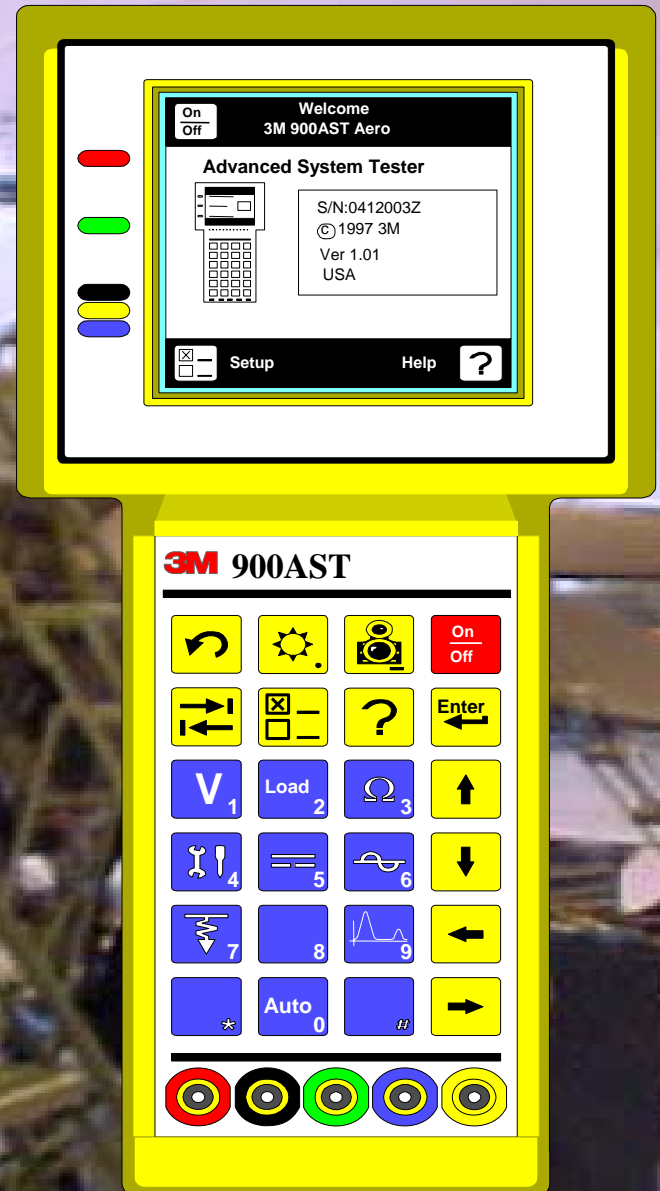


3M™ Advanced Systems Tester 900AST

Your Presenter:
Steve Falteisek
3M Aerospace



3M™ Advanced Systems Tester 900AST Wire Testing and Troubleshooting

Specifically designed for Aerospace users :

Commercial

Military

FBO'S

MRO

Corporate

Private



Product Features

- DC volts
- AC volts
- Resistance measurements with voltage compensation
Moisture and corrosion detection
- Bonding checks in Milliohms
- Resistance fault locate (distance to a fault)
- Time Domain Reflectometer (TDR)
 - Single and Dual Trace Modes, Memory, Auto with main event detection and Peak mode for locating intermittent faults.
- Fault locating tone
- DC Load Test
- Capacitance Testing

Fault Locating

Locate Faults: The TDR function can identify and display shorts and opens to within 2% of range and provide the distance to fault in inches.

The tester can record events and compare them, I.E., record the wire trace of one aircraft and compare it against another aircraft.

The 900AST tester can also download wire traces into a computer via I.R., software is available at no charge. The operator can import traces to an EXCEL spreadsheet for review and future reference.



Ease of Use

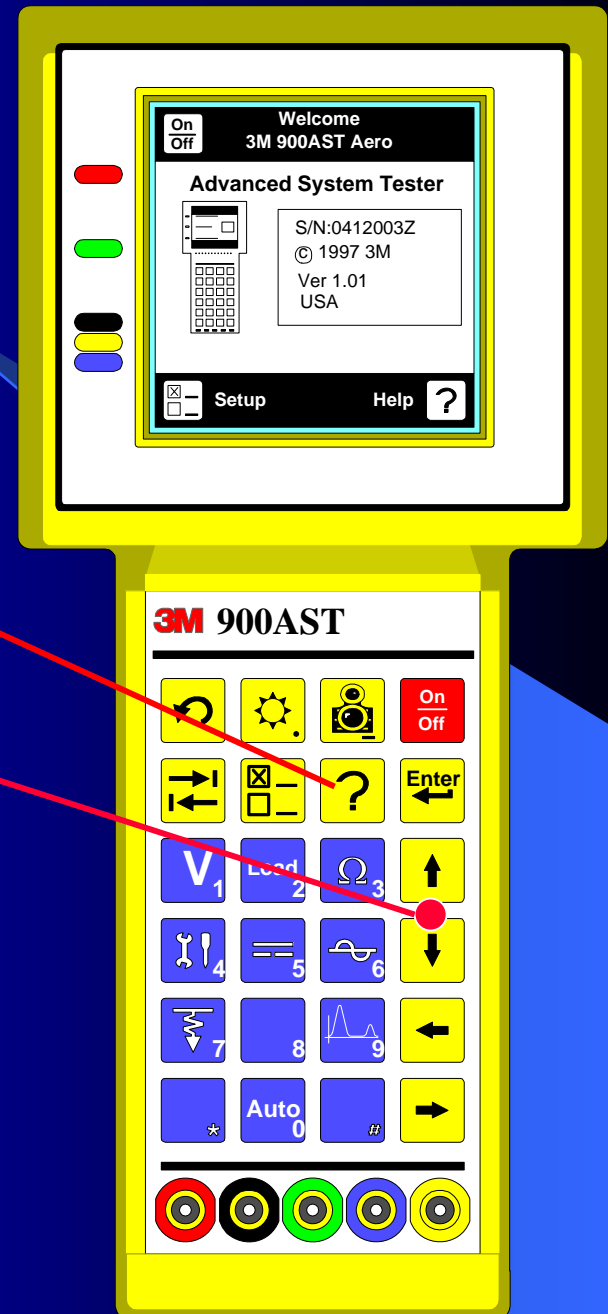
- Minimal training required to operate unit; suitable for technicians with little or no previous TDR (Time Domain Reflectometer) experience.
- The tester uses standard multimeter leads for most testing and has a special coax cable for the TDR function.
- On screen menus, connection diagrams and control key prompts make the unit easy to use. Built in context sensitive help available at all times.



Help Key

Use the Help key, ?, to get context sensitive help with any screen or function. 900AST Manual text appears to guide you through wiring tests and controls.

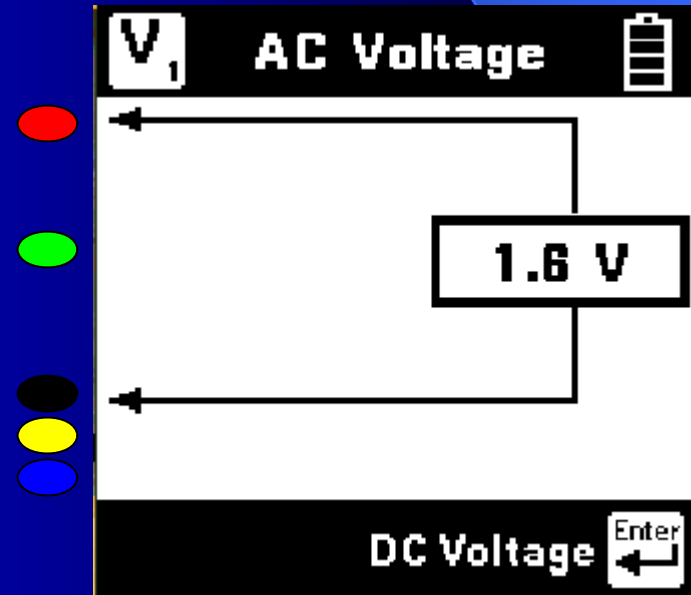
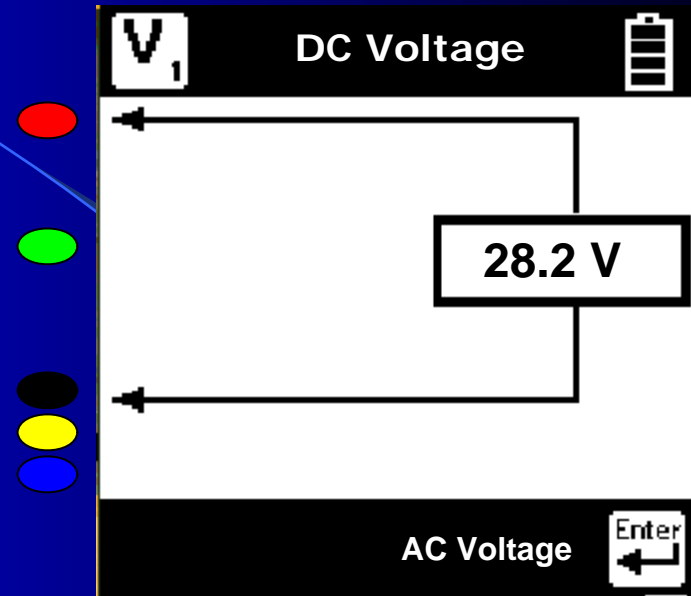
Push the up or down arrow keys to scroll through the text.



Measuring DC/AC Voltage

- **Applications**

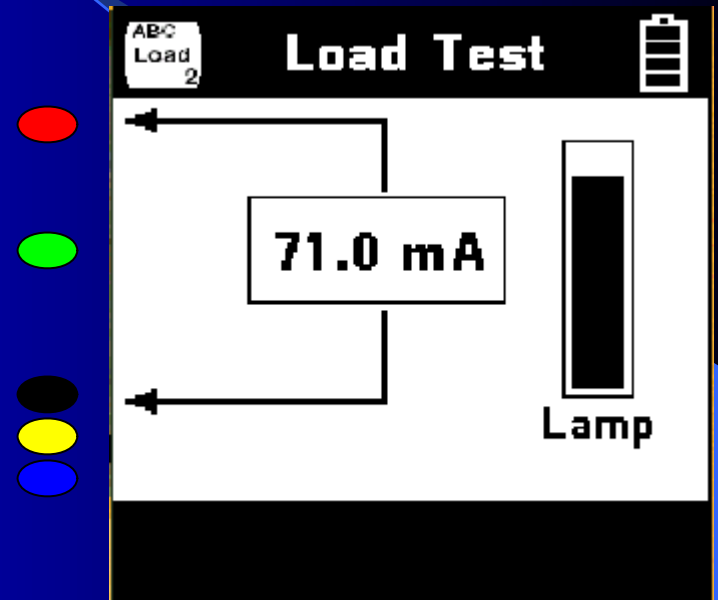
- Measure the DC/AC voltage between two conductors or one conductor and ground.
- The maximum voltage that can be measured is 300 VDC or 250 VAC.



DC Load Lamp

- **Applications**

- Simulates the current used by a #327 light bulb in a circuit with 28 volts applied, uses aircraft DC system as current source.
- If the circuit has poor continuity the bar graph will be lower. This may indicate a fault in the circuit.



Measuring Resistance

- **Applications:**

- - **Resistance**

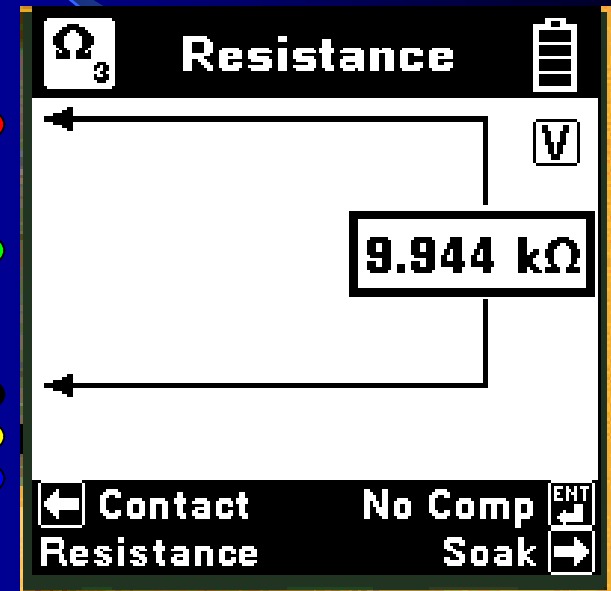
to 1 Gig ohm. Voltage compensation capable. Ω

- **Bonding checks**

This ohmmeter can test the resistance of splices, circuit breakers, soldered connections, grounds, contacts, etc to 1 Milliohm.

- **Soak Test**

This is an extended period resistance measurement tool used to identify wet or corroded circuits.



Capacitance

Use this function to test for:

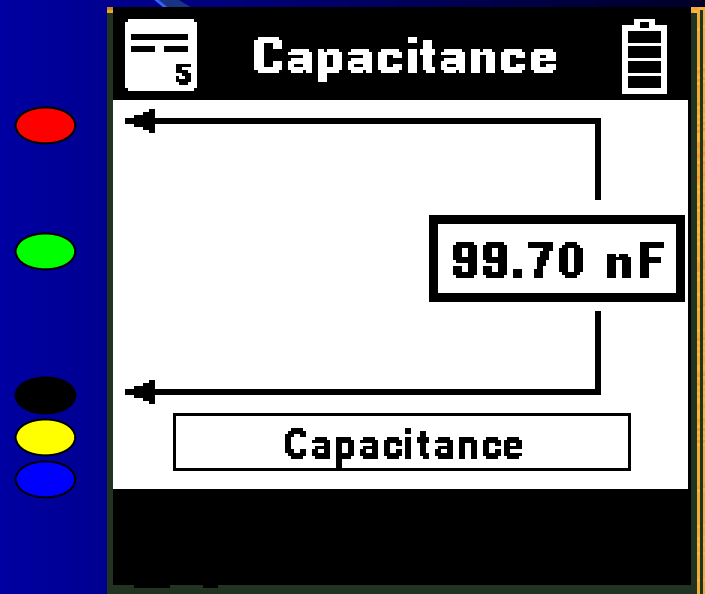
- **Branch Circuits**

Branch circuits are identified when one known set of pairs without a branch circuit are compared to another pair.

Should the second pair have higher capacitance there is probably a branch circuit.

- **Shield Breaks/Terminations**

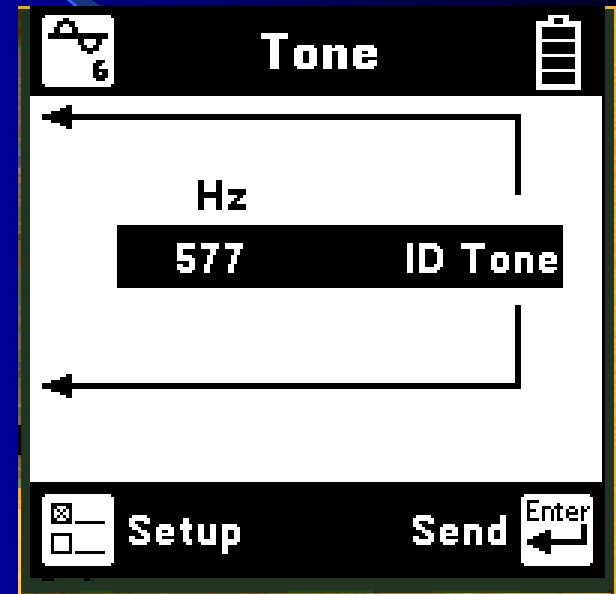
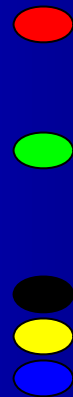
Comparing two identical shielded wires in a circuit should provide roughly the same capacitance. A large variation in capacitance may indicate a broken or unterminated shield.



Tone

- **Application**

- Send a tone on a pair of conductors to trace the path of the conductors.
- Tracing will require an inductive amplifier (not available from 3M)
- Use Setup to set the frequency of the tone. The range is 200 Hz to 1000 Hz.
- 577 Hz is a common frequency for tracing.



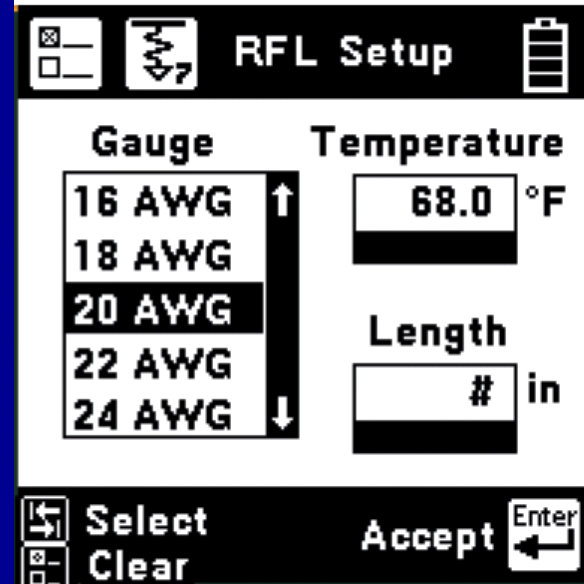
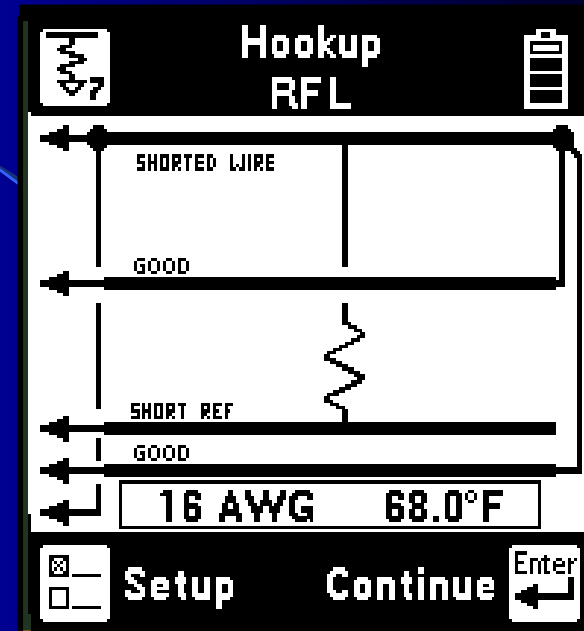
Resistance Fault Locate (RFL)

Application

- This function can calculate the distance in inches to a short or resistive fault. This function will locate resistive faults that TDR's are incapable of locating, faults up to 500K Ohms.

Setup

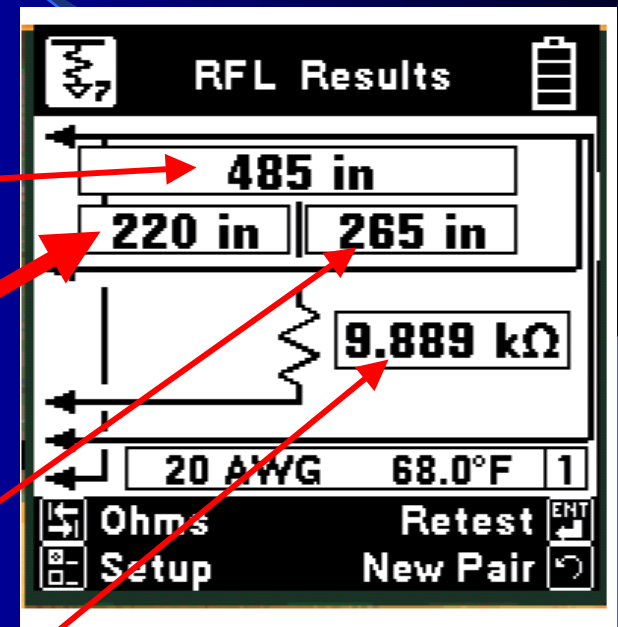
- Select conductor gauge
- Input either conductor temp or wire length, one needs to be unknown.



RFL Provides Location of Resistance Fault

● Results

- The length of the conductor being tested.
- The distance from the end of the test leads to the fault.
- The distance from the fault to the end of the conductor being tested.
- The value of the fault.

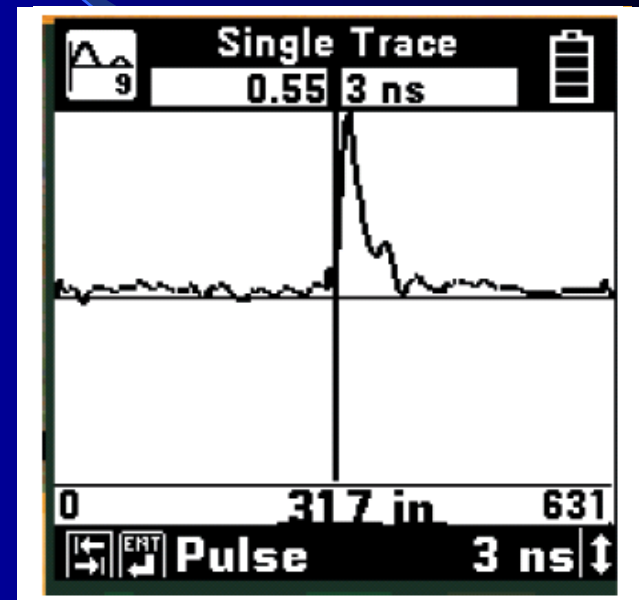


TDR

- **Application**

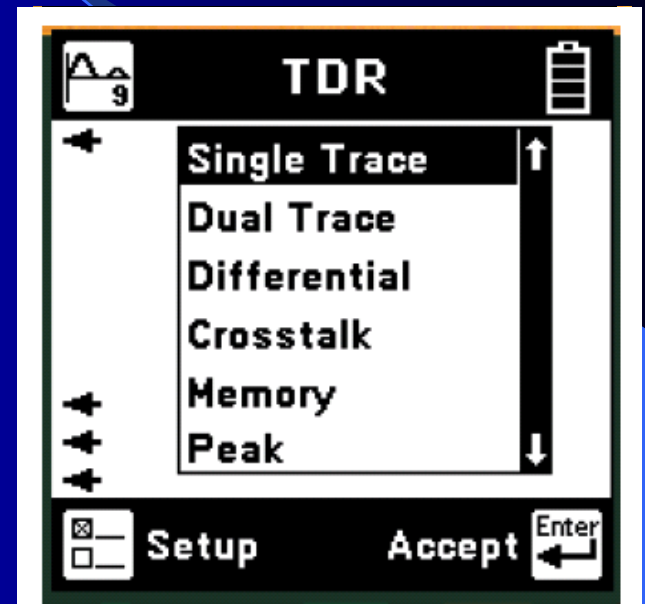
- Time Domain Reflectometer can measure the distance to “events” on a pair of conductors.

- **Events include:**
 - Opens
 - Shorts
 - Branch circuits



TDR

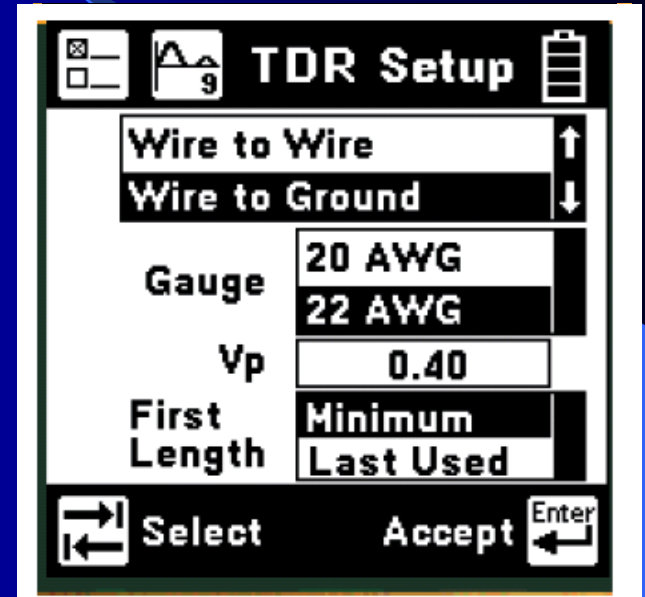
- TDR Main Menu



TDR

- **Setup**

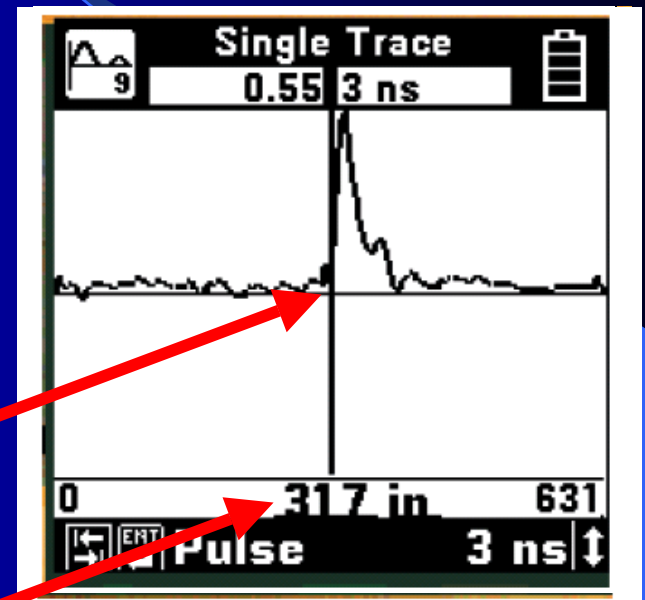
- Select the circuit configuration:
 - Wire to Wire
 - Conductor to Ground
 - Twisted Pair
 - Coax Wires



TDR

- **Sample Traces**

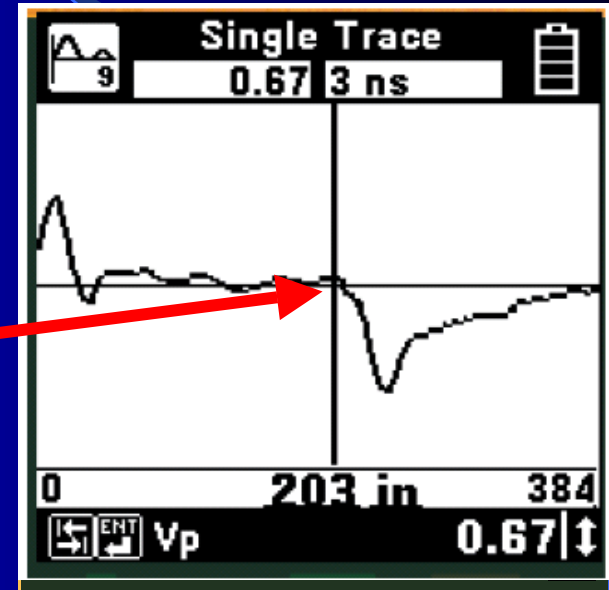
- Use the Right and Left arrow keys to position the cursor at the left-hand side of an event.
- This event shows the distance to an open circuit at 317 inches.



TDR

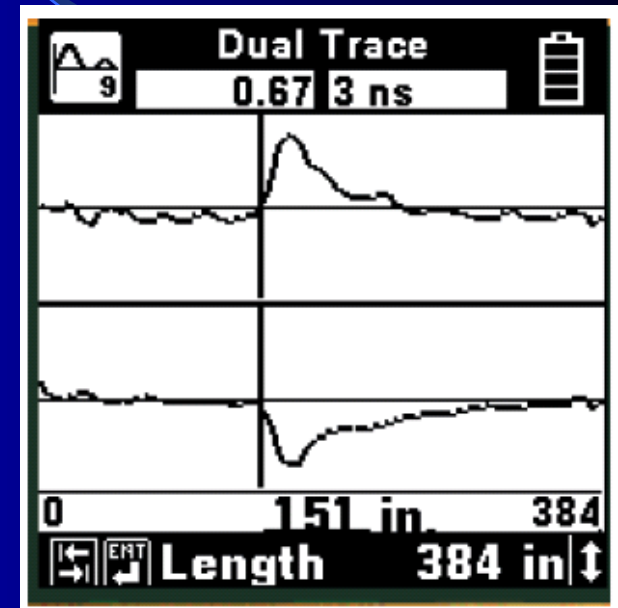
- **Sample Traces**

- This event shows the distance to a short circuit at 203 inches.



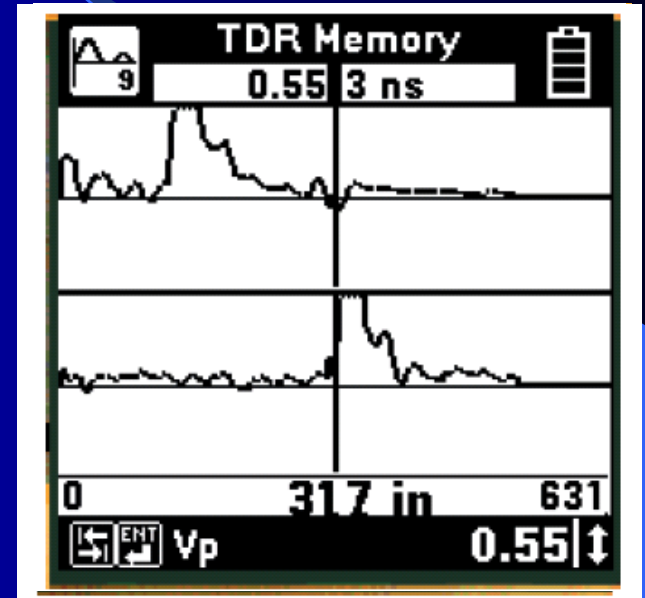
TDR

- 2 Pair Test Modes:
- Use **Dual Trace** to compare two active traces.
 - Use **Differential** mode to display only the difference between two circuits.
 - Use the **Crosstalk** mode to display the amplitude and location where electrical coupling is taking place.



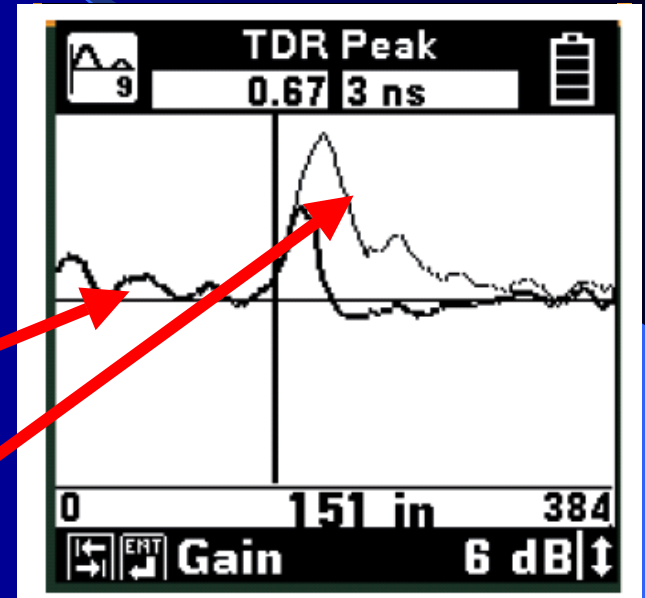
TDR

- **The Memory mode displays a live trace and a stored trace.**
 - A typical application would be to store a trace from an aircraft with a known good circuit and compare this with the aircraft with the faulted circuit. You may also upload stored traces to your PC.



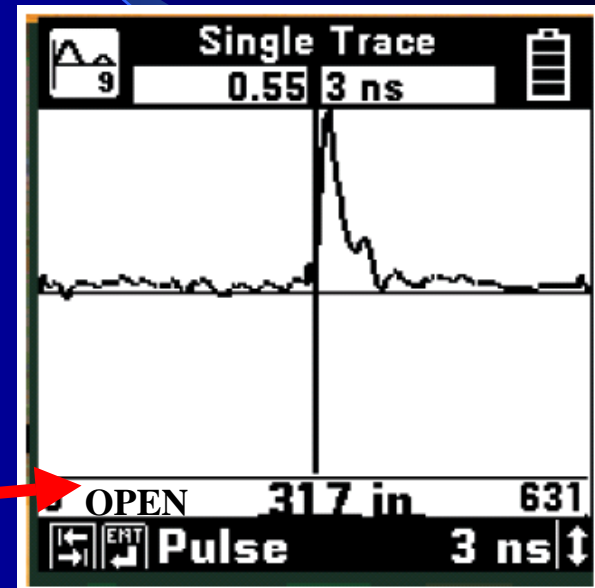
TDR

- **The Peak Mode**
captures intermittent faults on wiring.
 - Same display as Single Trace
 - Intermittent trace



Auto TDR

- **The Auto TDR** for main event detection is quick and easy to use.
- Tester provides, opens, shorts and event if no clear main event fault is detected.



Auto TDR

- For shorts that are too high for the Auto TDR to measure, the tester will recommend using the Resistance Fault Locate function. You may press enter to continue or use the regular TDR function.



Operation

- **Unit is durable, passes a five foot drop test on concrete in the case.**
- **Operates on 6 AA batteries for 22 hours without back light.**
- **Unit is water resistant.**
- **No external metal elements for safety.**
- **Unit is rated to Mil Spec 810F for explosion safety.**
- **U.S. Military NSN # and GSA Contract have been issued.**
- **Unit is self-calibrating, calibration standards provided and 3M offers calibration service.**

Product Support

24/7 phone support

Four hour training course provided at no cost for unit purchase of 8 units.

Training provided at CONUS location of your choice.

5 day turn around for unit repair (inside CONUS)

Product training DVD tailored for use on operators CBT (Computer Based Training) system.

Thank You for Attending Our 3M™ Advanced Systems Tester 900AST Presentation.

Contact Information:

Presenter: Steve Falteisek, 651-733-2805

For ordering information in Europe please contact:

Remy Noblet

3M Aerospace & Aircraft Maintenance Division

Office : +33 (0)1 30 31 62 96 - Fax : +33 (0)1 30 31 62 48

Mobile : +33 (0)6 72 27 97 92

U.S. Contact:

Phone 866-556-5714 or 800-426-8688

Fax 651-737-4380

For technical support please contact: 512-984-5038

3M is a trademark of 3M Company

Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in 3M's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorized officer of 3M.

Warranty; Limited Remedy; Limited Liability.

This product will be free from defects in material and manufacture for a period of 12 months from the date of purchase. 3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. Except where prohibited by law, 3M will not be liable for any loss or damage arising from this 3M product, whether direct, indirect, special, incidental or consequential regardless of the legal theory asserted.