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# PHONE SCAN - Portable Phone Tester

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- Tests phones in the field
- Finds all common geophone problems – EVEN STICKY PHONES
- No operator interpretation required. Fast, accurate, read-at-a-glance bar graph display.
- Easy setup in the field – does not require special components from the factory.



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## description & application

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The Phone Scan Four allows a cable crew to find 99% of all geophone problems that normally occur on the line.

Four tests are provided; an active AC impedance measurement, a noise measurement, a leakage measurement and a polarity test. The active AC impedance measurement performed at the natural frequency of the geophone string detects damping, coil freedom, resistance (continuity) and natural frequency problems.

Subtle problems such as sticky phones that other geophone testers cannot detect are easily found. In the case of horizontal or 3-component phones, coil freedom is a particularly important parameter because a small amount of case tilt will lock the coil of

a horizontal phone. When a crew is using these phones, it becomes important to test the plant as well as the geophone. Simple continuity tests will not find locked coils – the AC impedance measurement provided by the PHONE SCAN will find the problem.

The PHONE SCAN is a rugged, lightweight, water-tight unit supplied with a leather carrying case and shoulder strap. It was designed to be carried by the crew so they can find a problem while still at the station. The PHONE SCAN frees the recording truck from looking for bad, noisy or leaky strings and prevents finding bad phones by seeing dead traces on the recorder.

Each PHONE Scan can be supplied with a user specified connector panel to match the geophone take-out or a Mueller top panel.

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macha international, inc.      houston

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## unit description

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Field operation of the Phone Scan is simple. Before the unit is used on the line, it is calibrated to the type of string used on the crew. The PHONE SCAN is available with internal or external calibrating switches. External switches (as shown above photo) provide convenience when the PHONE SCAN will be used to check several different string configurations. The internal switch version is recommended when the unit will be used on one crew with a single string configuration.

Calibration procedures for either the internal or external switch model are identical. Natural frequency is switch selected from 0.45 to 99.9 Hz. An AC impedance value is set (up to 19990 ohms) and the front panel display scale is set at +/- 10% or +/- 20% deviation. The AC impedance value can be obtained from the manufacturer's string design information or

directly from the strings on the crew. The PHONE SCAN can be used to obtain impedance values from several good strings. An average of the values is then used as the AC impedance standard.

Once the switches are set, the field operator simply connects the string, pushes the impedance pushbutton, and reads the front panel bar graph display, which shows a plus or minus deviation from the setup value. A second pushbutton test displays noise of the string over a two-decade range (.01 to .1 to 1 mV). The third pushbutton test displays the leakage as an actual resistance measurement with center scale on the display at 1 meg ohm. A toggle switch is used to turn on the polarity circuit. Polarity is checked by tapping on each phone or crystal face. Correct polarity is indicated by a short tone. A different tone signifies a polarity reversal.

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## specifications

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**Size:**

9" H x 4½" W x 3⅜" D  
(22.9 x 11.4 x 8.6 cm)

**Weight:**

3½ lbs (with carrying case)  
1.59kg

**Operating Temperature:**

-20°C to +50°C (battery dependent)

**Calibration Switches:**

Internal or External  
Specify when ordering.

**Connector:**

Mueller top panel or mating panels can be supplied for all commercially available geophone take-out connectors.  
Specify when ordering

**Power Requirement:**

Two 9V transistor batteries

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