

# MultiScanner® i700 OneStep™ Multifunction Wall Scanner

Congratulations on purchasing the most technically advanced wall scanner ever created! Zircon invented the StudSensor™ in 1980 and has put over 25 years of research into developing OneStep™, the advanced technology at the core of MultiScanner® i700. OneStep technology senses, processes, and adapts to wall surfaces to provide high-definition visibility into walls, floors, and ceilings. MultiScanner i700 is the fastest, most accurate, and easiest-to-use wall scanner on the market today.

## REGISTER YOUR PRODUCT AND WIN!

At Zircon, we value customer feedback, which allows us to better serve you with product support and updates, and make enhancements to our products and Web site. Register your product today and be automatically entered in our monthly drawings to win free Zircon products. To quickly and easily register your Zircon product, please visit [www.zircon.com](http://www.zircon.com)

### 1. INSTALLING THE BATTERY

Press battery door release in with your finger or a coin and lift up to remove door.

Place 9-volt battery into the compartment and press into place.

Replace battery door and snap shut. Battery will last approximately 2 years under normal conditions.

### 2. SELECTING THE MODE

Move selector switch to the desired mode: STUD SCAN for finding wood or metal studs; METAL SCAN for locating metal; or AC SCAN for locating hot AC wiring.

Move selector switch to the Off position when not in use to prevent the tool from accidentally powering on and wearing down the battery.

### 3. TIPS FOR PROPER OPERATION

For optimum scanning results it is important to properly hold MultiScanner i700 and move slowly when scanning. The following tips will ensure accurate scanning results:

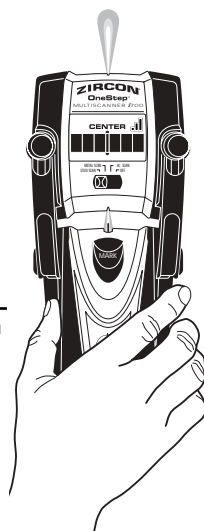
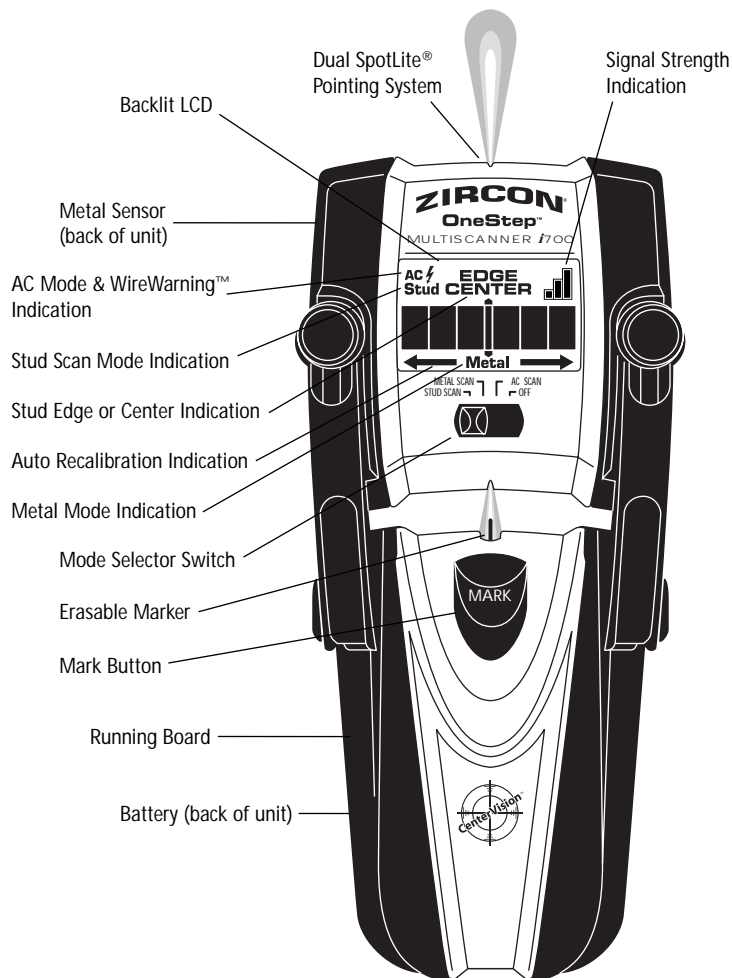
- Grasp the handle with your thumb on one side and your fingers on the other side. Make sure your fingertips are resting on or above the running board and not touching the surface being scanned or the scanning head of the tool.
- Hold the tool straight up and down, parallel to the studs, and do not rotate the tool.
- Keep tool flat against the wall and do not rock or tilt the tool when slowly sliding across the surface being scanned.
- Make sure your other hand or any other part of your body is not touching the surface being scanned. This could interfere with the tool's performance.

### 4. CALIBRATING THE TOOL

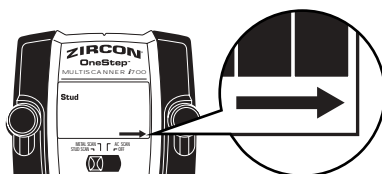
MultiScanner i700 is the world's first StudSensor that can be calibrated anywhere on the wall. It constantly monitors the subsurface environment 10 times per second and automatically recalibrates, when needed, to successfully find the center of studs in OneStep!

- Place MultiScanner i700 against the wall and press the handle until it lays flat against the wall. Pressing the tool to lay flat against the wall will automatically power on the tool via the internal on/off switch.
- Once powered on, tool will automatically perform all calibrations. The LCD will display all icons until calibration is complete. Upon completion of calibration, the SpotLites and buzzer will momentarily activate and the tool will begin continuous measurements. Continue to press the tool flat against the wall and begin scanning.

**Note:** It is important to wait for calibration to complete (1–2 seconds) before moving the scanner.



- One of the most important factors in ensuring scanning accuracy is calibrating the tool away from a stud, so the tool will sense increased density over the stud. During scanning, the tool will automatically recalibrate itself when needed. This recalibration is usually transparent and no indication is made. If the tool is initially calibrated near a stud and then moved away (it will detect the density of the wall decreasing), and an arrow icon will be illuminated, indicating the direction of the missed stud.



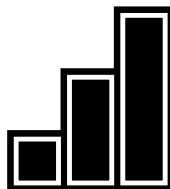
## 5. SCANNING IN STUD MODE

Continue to press the tool flat against the wall and slowly slide the scanner across the surface to find the EDGE or CENTER of the stud. An audio signal will sound and the SpotLites will illuminate over the center.

*Helpful Hint: Moving the tool slowly when scanning improves accuracy. We also suggest double-checking the location of the stud at two or three different heights.*

## 6. USING THE SIGNAL STRENGTH INDICATOR

MultiScanner 7700 is a powerful tool that can detect studs and other objects deep behind wall surfaces. Depending on the proximity of electrical wiring or pipes to the wall surface, MultiScanner 7700 may detect them as studs. The signal strength indicator bars can help you determine if the object located is a stud, a pipe, bundle of wires, or some other object. In addition, the signal strength indicator can provide a visual indication of the relative depth of the stud located.



When a stud is located, take note of the signal strength indicator.

The signal strength indicator displays 1, 2, or 3 bars, depending upon the power of the signal it detects. Proceed as follows, based on the signal strength display:

- If a 3-Bar signal strength icon is displayed, the object is probably a 2x4 or 2x6 wood stud behind a standard thickness wall.
- If a 2-Bar signal strength icon is displayed, this may indicate a stud was detected on a wall with thick plaster or two sheets of wallboard. You can verify that the object located is really a stud by looking for other studs 16 inches to the left or right.
- If a flashing 1-Bar signal strength icon is displayed, it is very likely the object located is not a stud. Further investigation is required. **Do not assume the object located is a stud when the 1-Bar signal strength icon is displayed.** Perform all the following steps to verify the identity of the object located:

**Step 1:** Scan the adjacent vicinity to see if you can locate a stud with a 3-Bar signal strength. If another 2-Bar or 3-Bar stud is located, the original 1-Bar object detected is most likely not a stud, but could be an electrical wire or plumbing that is recessed behind the wall.

**Step 2:** Switch to METAL SCAN mode and rescan the area to determine if the 1-Bar object located is plumbing, a bundle of wires, or some other metal object.

**Step 3:** Switch to AC SCAN mode and rescan the area to determine if hot AC wires are present. Caution should always be used when nailing, sawing, or drilling in walls, floors, and ceilings that may contain these items. Always turn off the power when working near electrical wires.

**Step 4:** After performing the steps above, scan a wider area to determine if other 1-Bar objects are located and are spaced as you would expect for studs. Studs or joists are normally spaced 16 or 24 inches apart and are 1½ inches wide. If so, they are probably studs, and the 1-Bar signal strength icon was flashed because the wall is thick. Anything closer together or a different width may not be a stud, joist, or firebreak.

## 7. SCANNING IN METAL MODE

Press the tool flat against the wall and slowly slide the scanner across the surface. MARK the spot where the display bars peak and the steady tone sounds. The SpotLites will also shine a beam of light. Continue in same direction until display bars reduce.

Reverse direction and MARK the spot where the display bars peak from the reversed direction. The midpoint of the two marks is the location of the center of the metal object.

## 8. SCANNING IN AC MODE

Press the tool flat against the wall and slowly slide the scanner across the surface. MARK the spot where the display bars peak. Continue in the same direction until display bars reduce. Reverse direction and MARK the spot where the display bars peak from the reversed direction. The midpoint of the two marks is the location of the center of the electrical object.

**Note: AC SCAN mode will only detect hot AC wiring.**

### AC WireWarning™

Zircon's AC WireWarning™ feature works continuously in all modes. When AC voltage is detected, the AC Alert warning icon will appear in the display.

**CAUTION:** Wires deeper than 2 inches (51 mm) from the surface, in conduit, or behind plywood shear wall may not be detected. Use extreme caution under these circumstances or whenever hot AC wiring is present. Always turn off power when working near electrical wires.

## 9. WORKING WITH DIFFERENT MATERIALS

**Wallpaper:** The MultiScanner 7700 functions normally on walls covered with wallpaper or fabric, unless the materials are metallic foil, contain metallic fibers, or are still wet after application.

**Lath & plaster:** Due to irregularities in plaster thickness, it is difficult for the MultiScanner 7700 to locate studs in STUD SCAN mode. Change to METAL SCAN mode to locate nail heads holding laths to stud.

If plaster has metal mesh reinforcement, MultiScanner 7700 will be unable to detect through that material.

**Textured walls or acoustic ceilings:** When scanning a ceiling or wall with an uneven surface, place thin cardboard on the surface to be scanned and scan over the cardboard. Calibrate with cardboard in place.  
**Wood flooring, subflooring, or gypsum drywall over plywood sheathing:** Use STUD SCAN mode and move the tool slowly. The signal strength indicator may only display 1 or 2 bars when the tool locates a stud through thick surfaces.

MultiScanner *i700* cannot scan for wood studs and joists through carpeting and pad. In problematic situations, try using METAL SCAN to locate nails or drywall screws that line up vertically where a stud is positioned.

## 10. MARKING THE LOCATION

Once an object is located, you can MARK the location by gently pulling down the MARK button with the tip of your finger. Pulling back the MARK button will cause a pencil point to extend from the front of the handle, placing a short erasable line on the wall.

## 11. CHANGING THE MARKER TIP

Pull and hold the MARK button to fully extend the marker tip. Grasp the marker and pull it off the marker post. To install a new marker tip, pull and hold the MARK button to fully extend the marker post. Push the new marker onto the marker post.

**Note:** MultiScanner *i700* comes with three spare marker tips. These tips are stored in a compartment located behind the battery.

## 12. REMOVING OR REPLACING THE SCANNING HEAD

MultiScanner *i700*'s scanner head may be removed from the handle to facilitate cleaning or repair. Or the scanning head may also become separated from the handle if accidentally dropped or twisted. Follow the directions below to replace the scanning head:

**To remove head:** Place the back of the head in the palm of one hand, and grasp the body of the unit in the other hand. Slowly and gently lift and turn the body, removing one arm from the socket at a time.

**To replace the head:** Align the end of the arms over the sockets and gently snap them back into their sockets, one arm at a time.

## FCC Part 15 Class B Registration Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules.

## 13. HELPFUL HINTS

(See also number 3, Tips for Proper Operation)

Situation	Probable Cause	Solution
Detects other objects besides studs in STUD SCAN mode. Finds more targets than there should be.	<ul style="list-style-type: none"> <li>Electrical wiring and metal/plastic pipes may be near or touching back surface of wall.</li> </ul>	<ul style="list-style-type: none"> <li>Scan the area in METAL and AC SCAN modes to determine if metal or hot AC is present.</li> <li>Check for other studs equally spaced to either side (12, 16, or 24 inches [305, 406, or 610 mm]) apart or the same stud at several places directly above or below the first.</li> </ul> <p><i>Use CAUTION when nailing, sawing, or drilling in walls, floors, and ceilings where these items may exist.</i></p>
Area of voltage appears much larger than actual wire (AC only).	<ul style="list-style-type: none"> <li>Static charge may develop on drywall, spreading voltage detection as much as 12 inches (305 mm) laterally from each side of an actual electrical wire.</li> </ul>	<ul style="list-style-type: none"> <li>To narrow detection, turn unit off and on again at the edge of where wire was first detected and scan again.</li> <li>Place your free hand flat against wall near tool during the entire scan to drain static.</li> </ul>
Difficulty detecting metal.	<ul style="list-style-type: none"> <li>Tool calibrated over metal object.</li> <li>Metal targets too deep.</li> </ul>	<ul style="list-style-type: none"> <li>The scanner may have been calibrated over a metal object, reducing sensitivity. Try calibrating in another location.</li> <li>Scan in both horizontal and vertical directions. Metal sensitivity is increased when metal object is parallel to sensor, located under Zircon logo.</li> </ul>
Image of metal object appears wider than actual size.	<ul style="list-style-type: none"> <li>Metal has greater density than wood.</li> </ul>	<ul style="list-style-type: none"> <li>To reduce sensitivity, recalibrate MultiScanner <i>i700</i> over either of first two marks.</li> </ul>
Constant readings of studs near windows and doors.	<ul style="list-style-type: none"> <li>Double and triple studs are usually found around doors and windows. Solid headers are above them.</li> </ul>	<ul style="list-style-type: none"> <li>Detect outer edges so you know where to begin.</li> </ul>
You suspect electrical wires, but do not detect any.	<ul style="list-style-type: none"> <li>Wires may be shielded in metal conduit or behind metallic wall covering.</li> <li>Wires deeper than 2 inches (51 mm) from surface might not be detected.</li> <li>Wires may not be hot.</li> </ul>	<ul style="list-style-type: none"> <li>Try METAL SCAN to see if you can find metal, wire, or metal conduit.</li> <li>Always turn off the power when working near electrical wires.</li> <li>Try turning on switches to outlet.</li> <li>Try plugging a lamp into outlet and turning on switch.</li> </ul>



### LIMITED 1 YEAR WARRANTY

Zircon Corporation, ("Zircon") warrants this product to be free from defects in materials and workmanship for one year from the date of purchase. Any in-warranty defective product returned to Zircon\*, freight prepaid with proof of purchase date and \$5.00 to cover postage and handling, will be repaired or replaced at Zircon's option. This warranty is limited to the electronic circuitry and original case of the product and specifically excludes damage caused by abuse, unreasonable use or neglect. This warranty is in lieu of all other warranties, express or implied, and no other representations or claims of any nature shall bind or obligate Zircon. Any implied warranties applicable to this product are limited to the one year period following its purchase. IN NO EVENT WILL ZIRCON BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM POSSESSION, USE OR MALFUNCTION OF THIS PRODUCT.

In accordance with government regulations, you are advised that: (i) some states do not allow limitations on how long an implied warranty lasts and/or the exclusion or limitation of incidental or consequential damages, so the above limitations and/or exclusions may not apply to you, and further (ii) this warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Return product freight prepaid with proof of purchase date (dated sales receipt) and \$5.00 to cover postage and handling, to:

Zircon Corporation  
 \*Attn: Returns Department  
 1600 Dell Avenue, Unit K  
 Campbell, CA 95008-6992 USA

Be sure to include your name and return address. Out of warranty service and repair, where proof of purchase is not provided, shall be returned with repairs charged C.O.D. Allow 4 to 6 weeks for delivery.

Customer Service, 1-800-245-9265 or 1-408-963-4550  
 Monday-Friday, 8:00 a.m. to 5:00 p.m. PST  
 E-mail: info@zircon.com

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