



# Application Note 2004-3

SensComp, Inc.  
36704 Commerce Rd.  
Livonia, MI 48150  
Telephone: (734) 953-4783  
Fax: (734) 953-4518  
www.senscomp.com

## Verifying 6500 or Smart Sensor Operation

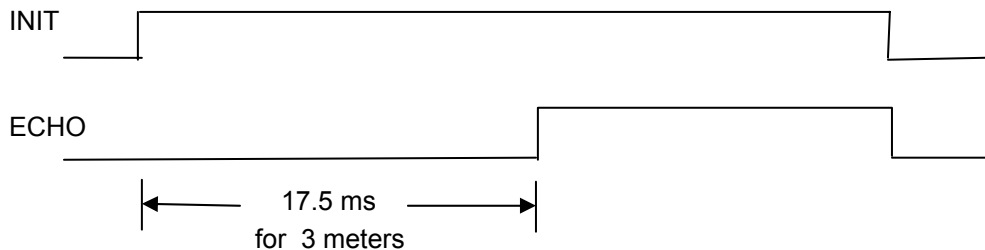
To verify the 6500 ranging module or the Series 600 Smart Sensor operation, connect an oscilloscope to the circuit as follows:

1. Connect the oscilloscope vertical channel 1 to INIT and use this channel as the oscilloscope trigger (trigger on positive edge).
2. Connect the oscilloscope vertical channel 2 to ECHO.
3. Verify that the ECHO waveform varies with distance between the transducer and the target.

The time between INIT and ECHO will be 17.5 milliseconds for a 3 meter distance between the transducer and the target.

The INIT signal **must** remain HIGH until after receiving the ECHO signal.

Note: The 6500 Sonar Ranging Module requires a 4.7K ohm pull-up resistor between the ECHO pin and Vcc (+5 VDC). The Series 600 Smart Sensor and the 6500 Enhanced Ranging Module have internal pull-up resistors, and do not require an external pull-up.



Normal Blanking time = 2.38 ms. When BINH, BLNK are not used, the minimum ECHO return will be 2.38 ms for a minimum target distance of 0.41 meters (16.1 inches) at 20° C.