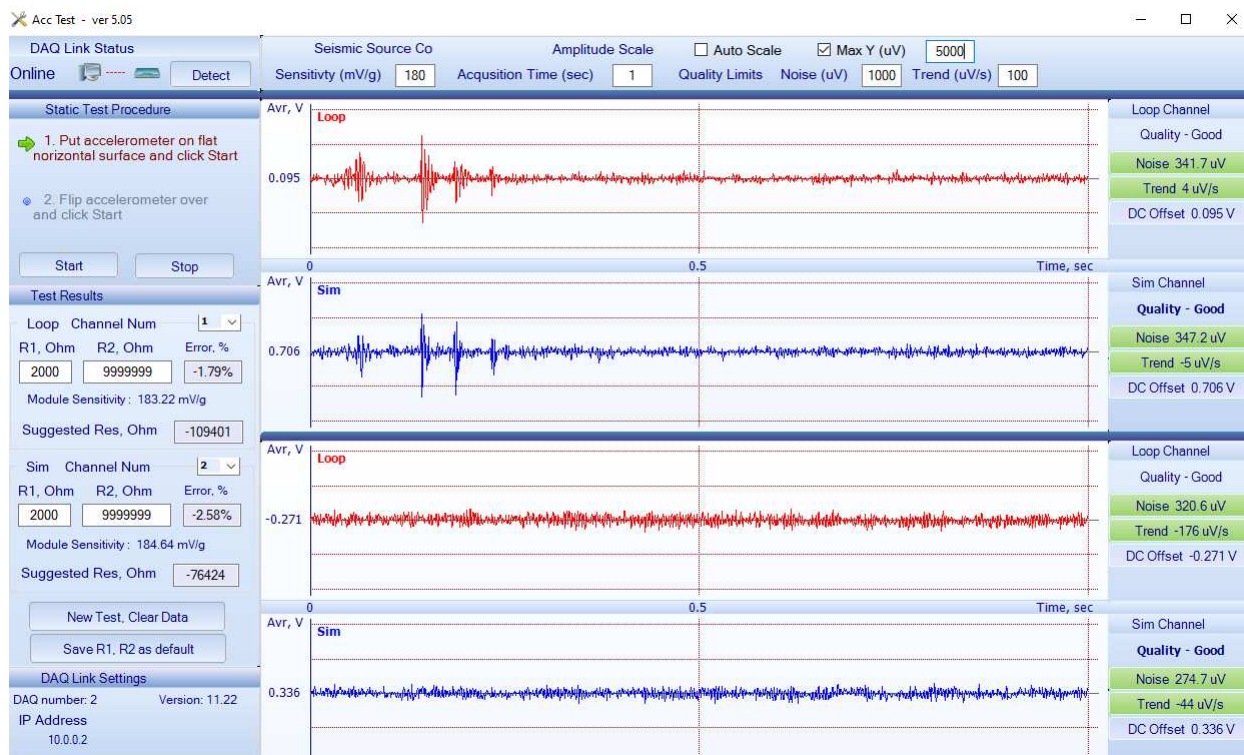




ACC Test

Accelerometer Test Software



User's Manual

AccTest System User's Manual

Printed in U.S.A.

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1 Introduction

1.1 System Description

The Bird Dog 3-11 system and special test cable is used to test the M5/M6 accelerometers. Also, with an additional + and – 15-volt DC power supply the M7 accelerometers can be tested.

- Connection cables are included to connect:
 - Power (11-18 VDC)
 - Accelerometer being tested.
 - Ethernet cable to connect BD3 to computer.

1.2 Bird Dog Software Installation and Setup

Create a new directory on the hard drive and copy all files from installation CD to that directory.

- ACCtest.exe – Accelerometer Test program used to analyze

2 Cable Connections

2.1 BD3-11 Cable Connections

- Connect BD3-11 to computer with patch cable provided.
- Connect 11-18 VDC supply to BD3 power cable (polarity does not matter). The power connects to the 2-pin connector on the BD3 unit. Make sure voltage to box is at least 11 volts. The power LED will operate with lower voltage, but the unit will not perform properly.
- Connect the Accelerometer test cable. Connect the 55-pin circular connector to the BD3-11 unit.
- Connect the + and - 15-volt power source to the Test cable when testing the M7 accelerometers.

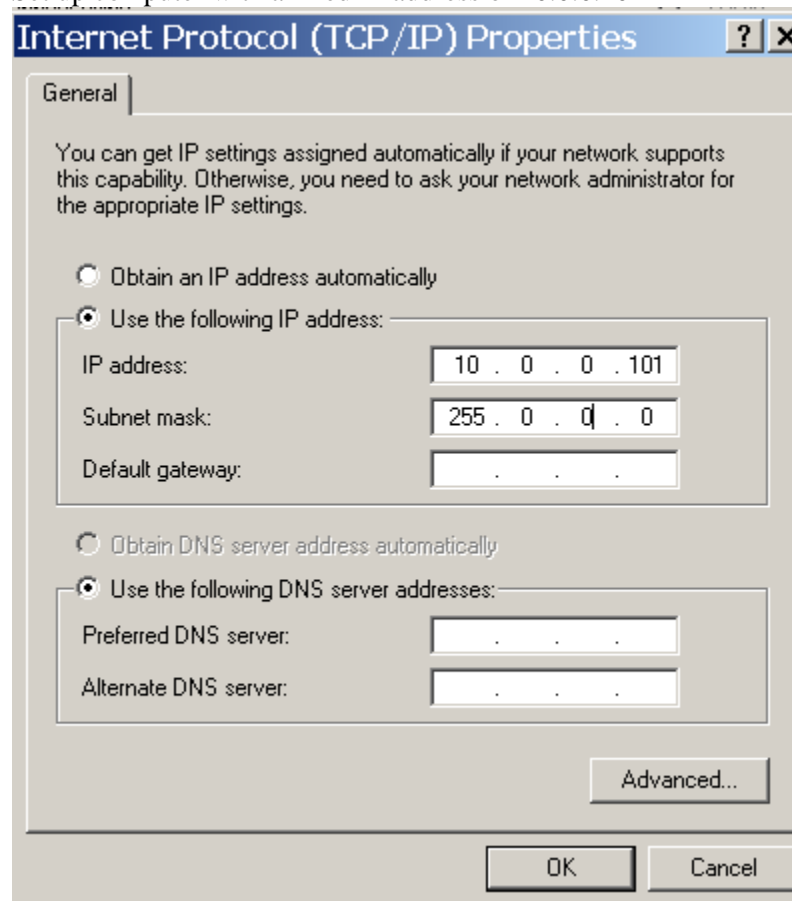


Warning: before connecting the Accelerometer make sure the Current Regulators are turned Off on the BD3-11

3 Configuring the Program

3.0 Ethernet Setup

Set up computer with a fixed IP address of 10.0.0.101



See section 8 for more details on setting up the fixed IP address.

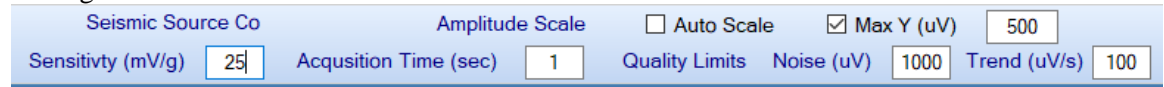
3.1 Acc Test ver 5

Start the AccTest



The top left corner will show the BD3-11 status. The BD3-11 should automatically be detected, and the status should show “Online”

Settings



For M5 and M6 accelerometers the Sensitivity should be set to 25 mV/G

For M7 accelerometers the Sensitivity should be set for 180 mV/G



Acquisition Time sets the length of the records. 1 second is the normal entry

Maximum Noise level before an error is flag can be set. This is the RMS noise level of the accelerometer.

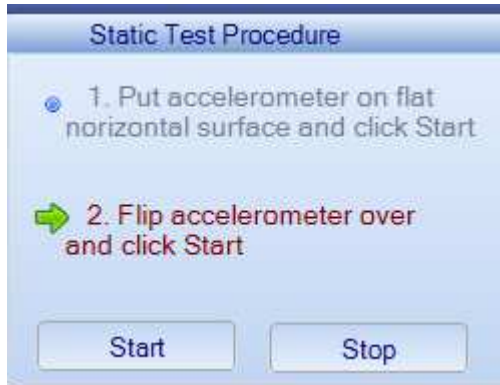
3.2 Basic Test

The Basic Test is called the “Flip” test. The test measures the acceleration due to gravity, then the unit is “Flipped” over and the acceleration due to gravity is measured in the other direction. The difference in the two measurements should be 2 times Gravity (2 G’s)

After connecting the Accelerometer place the accelerometer on a Flat surface.



Press the start button.

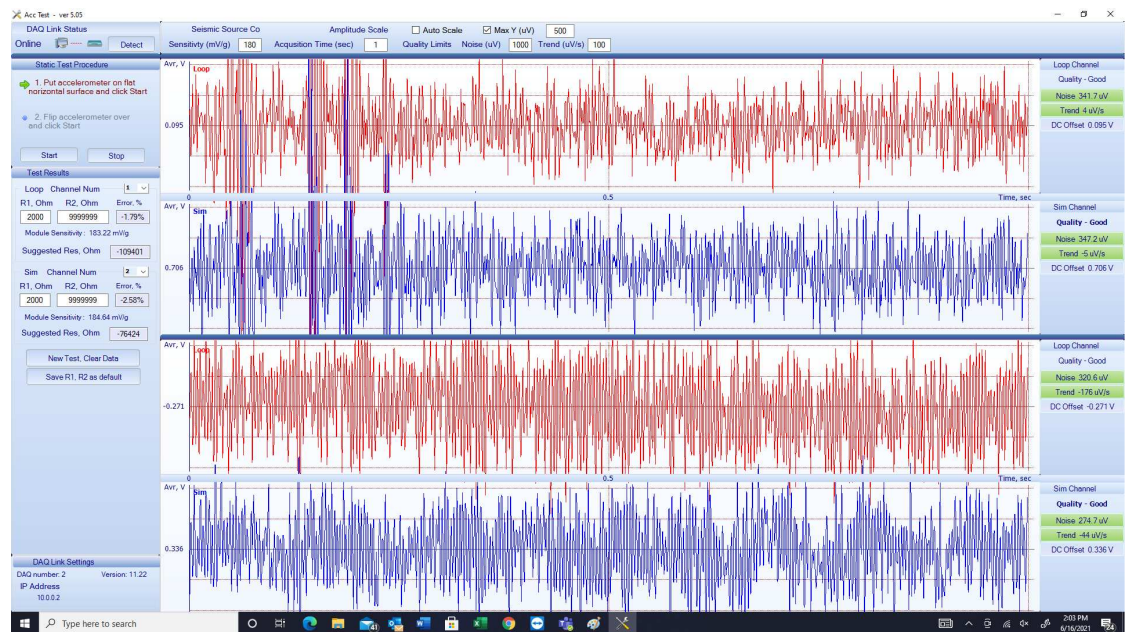


The Test data will be displayed.

Sim Channel
Quality - Good
Noise 284.9 μ V
Trend -12 μ V/s
DC Offset 0.715 V

The Noise is the RMS Noise of the record
Trend is the DC drift during the record. For Valid readings, the DC drift must be small value.
The DC Offset is the DC level of the Record this value will be used to compute the sensitivity.

Flip the accelerometer over and press start.



Test Results

Loop	Channel Num	
R1, Ohm	R2, Ohm	Error, %
2000	9999999	-1.79%
Module Sensitivity : 183.22 mV/g		
Suggested Res, Ohm		-109401

Sim	Channel Num	
R1, Ohm	R2, Ohm	Error, %
2000	9999999	-2.58%
Module Sensitivity : 184.64 mV/g		
Suggested Res, Ohm		-76424

New Test, Clear Data

Save R1, R2 as default

The % Error should be less than 5%.

Normally the % error should be less than 2 % and the difference between loop and sim must be very small.

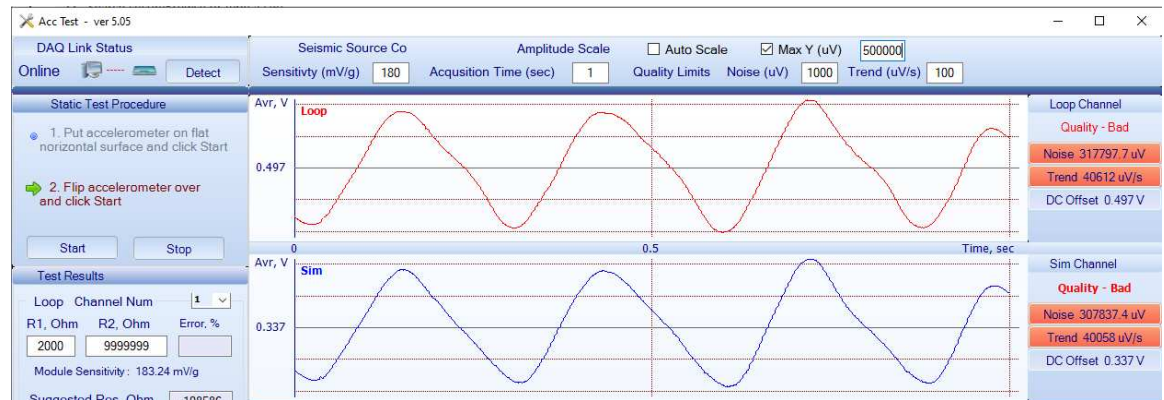
Ignore the R1 and R2 values. These are used for calibration and assembly of the accelerometer.

Other Tests

The Acc Test will show the Signal on both the Loop and Sim accelerometers

So, other tests can be performed.

Shaking the Accelerometer should display two signals that are very similar



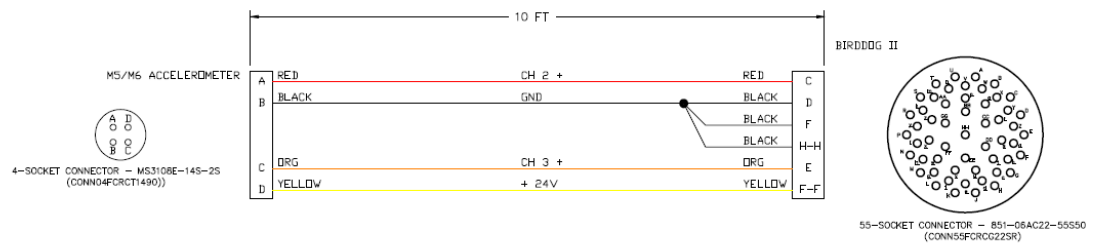
SrcSig software can also be used to display the signals.

4 Wiring Documentation

4.1 Bird Dog 3-11 Connector Wiring 9.1.5 PT 22-55 connector

Pin.....Signal	Pin.....Signal
A.....Ch 1 pos	b.....Ch 13 pos
B.....Ch 1 neg	c.....Ch 13 neg
C.....Ch 2 pos	d.....Ch 14 pos
D.....Ch 2 neg	e.....Ch 14 neg
E.....Ch 3 pos	f.....Ch 15 pos
F.....Ch 3 neg	g.....Ch 15 neg
G.....Ch 4 pos	h.....Ch 16 pos
H.....Ch 4 neg	i.....Ch 16 neg
J.....Ch 5 pos	j.....Ch 17 pos
K.....Ch 5 neg	k.....Ch 17 neg
L.....Ch 6 pos	m.....Ch 18 pos
M.....Ch 6 neg	n.....Ch 18 neg
N.....Ch 7 pos	p.....Ch 19 pos
P.....Ch 7 neg	q.....Ch 19 neg
R.....Ch 8 pos	r.....Ch 20 pos
S.....Ch 8 neg	s.....Ch 20 neg
T.....Ch 9 pos	t.....Ch 21 pos
U.....Ch 9 neg	u.....Ch 21 neg
V.....Ch 10 pos	v.....Ch 22 pos
W.....Ch 10 neg	w.....Ch 22 neg
X.....Ch 11 pos	x.....Ch 23 pos
Y.....Ch 11 neg	y.....Ch 23 neg
Z.....Ch 12 pos	z.....Ch 24 pos
a.....Ch 12 neg	AA.....Ch 24 neg

4.2 BD3-11 M6 Test Cable



4.3 BD3-11 M7 Test Cable

