

ACC Test

Accelerometer Test Software



User's Manual

AccTest System User's Manual

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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

Internet Protocol (TCP/I	P)P	r	эp	er	ti	es			?	×
General										
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.										
Obtain an IP address automaticall	ly									
 Use the following IP address: — 										
IP address:	10		0		0	. 1	01			
Subnet mask:	255		0		q		0			
Default gateway:										
C Obtain DNS server address autor	natical	y								
─● Use the following DNS server add	dresses	:-								
Preferred DNS server:										
Alternate DNS server:										
						А	dvar	nced.		
				Ok	(Can	cel	

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

3.1 Acc Test ver 5

Start the A	AccTest t - ver 5.05		
DAQ	Link Status		
Online		Detect	ľ.

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

Settings	
Doumgo	

0							
Seismic Source Co	A	mplitude Scale	🗌 Auto Sca	le 🗹 Max	κΥ (uV)	500	
Sensitivty (mV/g) 25	Acqusition Time	(sec) 1	Quality Limits	Noise (uV)	1000 T	rend (uV/s)	100
For M5 and M6 accele	rometers the S	ensitivity sh	ould be set to	25 mV/G			
For M7 accelerometers	s the Sensitivity	y should be s	set for 180 mV	//G			
Seismic Sour	rce Co						
Sensitivty (mV/g)	180						

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.

The Test data will be displayed.

Stop

Start

Sim Channel
Quality - Good
Noise 284.9 uV
Trend -12 uV/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 Res	sults	
Loop C	hannel Num —	1 ~
R1, Ohm	R2, Ohm	Error, %
2000	9999999	-1.79%
Module S	ensitivity : 183.22	2 mV/g
Suggeste	ed Res, Ohm	-109401
Sim Ch	annel Num	2 ~
R1, Ohm	R2, Ohm	Error, %
R1, Ohm 2000	R2, Ohm 9999999	Error, % -2.58%
R1, Ohm 2000 Module S	R2, Ohm 9999999 ensitivity : 184.64	Error, % -2.58% mV/g
R1, Ohm 2000 Module S Suggeste	R2, Ohm 99999999 ensitivity : 184.64 ed Res, Ohm	Error, % -2.58% mV/g -76424
R1, Ohm 2000 Module S Suggeste	R2, Ohm 99999999 ensitivity : 184.64 ed Res, Ohm ew Test, Clear Da	Error, % -2.58% mV/g -76424

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 perfomed.

Shaking the Accelerometer should display two signals that are very similar

X Acc Test - ver 5.05	
DAQ Link Status Seismic Source Co Amplitude Scale 🖸 Auto Scale 🗹 Max Y (uV) 500000	
Online Detect Sensitivty (mV/g) 180 Acquisition Time (sec) 1 Quality Limits Noise (uV) 1000 Trend (uV/s) 100	
Static Test Procedure Avr. V Loop Loop C	iannel
1. Put accelerometer on flat	y - Bad
norizontal surface and click Start Noise 31	7797.7 uV
2. Fin accelerator pur	0612 uV/s
and click Start DC Offse	et 0.497 V
Start Stop 0 0.5 Time, sec	
Test Results Sim	innel
Loop Channel Num 1 v	y - Bad
R1. Ohm R2. Ohm Error, % 0.327	7837.4 uV
2000 99999999)058 uV/s
	at 0.337 V
Module Sensitivity: 183.24 mV/a	

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**

PinSignal	PinSignal
ACh 1 pos	bCh 13 pos
BCh 1 neg	cCh 13 neg
CCh 2 pos	dCh 14 pos
DCh 2 neg	eCh 14 neg
ECh 3 pos	fCh 15 pos
FCh 3 neg	gCh 15 neg
GCh 4 pos	hCh 16 pos
HCh 4 neg	iCh 16 neg
JCh 5 pos	jCh 17 pos
KCh 5 neg	kCh 17 neg
LCh 6 pos	mCh 18 pos
MCh 6 neg	nCh 18 neg
NCh 7 pos	pCh 19 pos
PCh 7 neg	qCh 19 neg
RCh 8 pos	rCh 20 pos
SCh 8 neg	sCh 20 neg
TCh 9 pos	tCh 21 pos
UCh 9 neg	uCh 21 neg
VCh 10 pos	vCh 22 pos
WCh 10 neg	wCh 22 neg
XCh 11 pos	xCh 23 pos
YCh 11 neg	yCh 23 neg
ZCh 12 pos	zCh 24 pos
aCh 12 neg	AACh 24 neg

4.2 BD3-11 M6 Test Cable



55-SOCKET CONNECTOR - 851-06AC22-55S50 (CONN55FCRCG22SR)

4.3 BD3-11 M7 Test Cable



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