

AB function check for OBS, using Acquisition Test Box

OBS S/N 541

Date 11 March 2014 Operator DLW Glass OPEN or SEALED

Initial test setup

- if necessary, open command window in appropriate experiments "prep" directory
- connect 3 Broadband test cables to Acquisition Test Box (ATB)
- connect a power supply set to 13.5V, >1A to banana plugs on ATB
- connect a signal generator set to 1 Hz 200 mVrms (into Hi-Z) to BNC on ATB
- GPS clock with good signal available, with rev 2 clock check cable hooked up

Connections for each AB

- connect AB to wallbox, turn on shore power
- start obsterm in command prompt by typing "obsterm.py -px -snn" where x is the com port and nn is the OBS serial number. Record COM 31c
- address AC board (^aa), note if Q330 is powered or not
- if not powered, turn Q330 on (^ap1); after several seconds address AC board again (^aa)
- start Willard; "Status|Quickview", "Status|Misc. Analog", "Status|GPS Status"
- open "Configuration|Configuration Cloning" and check if A or B sensor package A
- connect battery and Sensor 2 (close to GPS) penetrators to ATB
- if configuration is for A sensor package, then all 3 Guralp LEDs should light; if B, then all 3 LEDs should be dark
- connect Sensor 1 penetrator into ATB; Center LED (Amber) should go active for ~7 sec

Test

- confirm that both SAIL LEDS (VA and GU) in ATB are lit
- in obsterm, press ^b to send a break, confirm that both SAIL LEDs go out for 1 sec
- set switch in ATB to DPG, record voltage from meter (~2.3 V) 2.37
- set switch in ATB to SEISMOMETER, record voltage from meter (~15 V) 14.68
- in Quick view record select Volts

	Ch 1	Ch 2	Ch 3	Ch 4
Record RMSmV	<u>197.52</u>	<u>197.52</u>	<u>197.69</u>	<u>107.67</u>
Record AVGmV	<u>-0.3</u>	<u>-1.4</u>	<u>-1.7</u>	<u>+0.5</u>
Record WIN (counts)	<u>235525</u>	<u>235524</u>	<u>235523</u>	<u>128075</u>
- confirm ch 1,2,3 RMS ~200mV, ch 4 RMS ~110mV, all AVG ~0mV
- record mass positions 1 3.8 2 2.5 3 1.4 (~1.3, 2.5, 3.8)
- In Commands|Sensor Control, select Sensor A Centering and hit apply
 - Confirm Center LED (Amber) goes active for duration set in Willard
- Repeat process for Sensor A Lock (Green LED)
- Repeat process for Sensor A Unlock (Red LED)
- turn off shore power, disconnect shore cable
- confirm Willard stops (cancel cmd)
- confirm Q330 is still operating (lights on Q330)
- confirm SAIL lights in ATB still lit
- record SEISMOMETER voltage from meter (~12.5V) 12.59
- reconnect shore cable
- check Q330 current (^aa, IQ330 ~ 75 mA) 74 mA
- turn on shore power, re-register in Willard

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OBS S/N 501

Check standard timing system

- when Q330 is locked to GPS (100%), set timebase: ^as0, ^a8, ^r, ^as1 18:13:04
- change Q330 to use Seascan: Configuration|GPS|Ext Seascan ✓
- confirm Q330 tracks: 1-D, ~ -20 μs or +1100 μs, 90%; record phase -22 μs
- change Q330 back to Internal GPS ✓

Check backup external timing system (optional for sealed AB)

- in Willard, turn off RS232 export (Configuration | GPS | None | Apply) ✓
- disconnect Ethernet cable from wallbox ✓
- note TB address from last AC sd command TB90
- change AC settings ^ae0, ^as0, ^a@1, ^at1 ✓ 2nd try
- type ^t to switch to Timebase mode (2400-N-8-1) ✓
- set timebase to bad time: #TByy<space>, !U<CR>, !T000111111 @<CR> ✓
- check that time is 000:11:11:xx, using #TByy?T<CR> 11:11:23 11:11:21
- connect clock check cable to wallbox ✓
- unlock timebase (#TByy <space> !U <enter>) ✓
- set clock to next minute(!T001hhmm00 no terminator), record date/time 18:18 18:26
- after next minute, check time manually (#TByy?T<enter>) 18:18:08 18:26:08
- type ^t to switch back to AC mode (9600-N-8-1) ✓
- change AC settings ^at0, ^a@0, ^as1 ✓
- do external clock check(^g, enter GPS clock comm port ³⁸<enter>, then "0" <enter>) 03/11/2014 18:27:06
- Confirm that Seascan time matches GPS clock time 03/11/2014 15:00:06 by 15.
- Record "OBS-GPS" offset, should be ~ -20 μs or +1100 μs -0.000020 OK!
- swap clock check cable for Ethernet cable at wallbox ✓
- resume normal Ethernet operation (^ae1) ✓
- re-register with Willard, restart Quickview ✓
- change Q330 to Ext Seascan, confirm Q330 tracks, record phase -19 μs
- confirm that this phase matches "OBS-GPS" measured by the external clock above ✓
- change Q330 back to Internal GPS, with RS-232 Import/Export, Apply ✓

Finishing up

- close Willard ✓
- disconnect AB penetrators to the ATB ✓
- if system is to be moved immediately, send ^am1, ^as0, ^ap0, then send ^aa to verify that sm=1, ss=0, sp=0, IQ330 ~ 0 mA ✓
- close obsterm (^xy) ✓