HLP RT-130 Station Installation (revised 6/27/2007 DEJ)

STATION: QK-105 Month: 10 Day: 14 Year: 2007
ARRIVAL TIME (local): 8:30 OPERATOR: Maureen, Krissandra, Mike, David, Steven
Handheld GPS Sta Loc: Lat: N 42.64 49.55° Lon: W 111.06 52.5° Elev: 1503 m
POWER: BATT-1: 12.76 BATT-2: 12.76 solar panel output (~18V): 20 v
(14.7v with charger active)

Connect cables:
✓ 1) Build power system
✓ 2) RT-130 (GPS) to GPS
✓ 3) Check power with voltmeter
✓ 4) Sensor to RT-130 (CH1-3)
✓ 5) power to RT-130
✓ 6) Clie to RT-130 (comm.)

Clie -> PFC_130 -> Control -> RAM -> Clear:............
Control -> Reset DAS:............
Control -> Format Disk -> 1:............ Format Disk -> 2:............

>Check that GPS has locked: Control -> Status -> GPS
(Warning: Load parameters from Clie to DAS ONLY AFTER GPS LOCK)

>Exit Control (click Done on successive screens until return to Control)
PFC_130 -> Work with Configuration (Refer to Configuration Sheet for RT-130 in back of service binder)
>Work with Configuration > Load > HLP (or) Work with Configuration > New > Name: HLP
> Edit configuration file:.............................................
>Send to DAS:.........................................................
>Confirm (optional): Upload from DAS and confirm that parameters have been correctly set in RT-130:...

SENSOR MASS POSITION: (Measure initial voltage at breakout box, vault open)
Voltage CH 1: -3.3 CH 2: 0 CH 3: 0 Bad Breakout Box - Chan 2 & 3 not working
Push mass center button from breakout box if any CH > +/-1.5 V (Guralp) or +/-2.5 V (STS-2) and, if necessary, repeat at 2-3 minute intervals until centered. Seal up vault and continue centering if necessary through the Clie.

If any CH > +/-1.5V (Guralp) or +/-2.5V (STS-2), touch center 1-3 (and update) until all CH < +/-1.5 V or 2.5 V.
Final mass position voltages: CH 1: 0.2 CH 2: 0 CH 3: 0

WAVEFORM MONITOR: Control -> Monitor -> View: Record Midpoint and Range
CH 1 918 356 CH 2 20078 284 CH 3 -24280 284

START ACQUISITION: Control -> Status -> Start Acq.
DAS Status: (use Update to Refresh)
Time: 2007, 287, 17:34:48
Acq: Started
Events: 3
RAM: 90 of 4352 Increasing?
Disk1: 0 of 1950 Current?
Disk2: 0 of 1950 (Current?)
Temperature: 21.9
Power: 14.0 3.3 backup
Ch: 1-3 DS: cc

GPS Status: GPS
Time: 2007, 287, 17:36:07
Sec since LL: 6 min.
Phase Diff (us): 0
Mode: Cycled
Status: asleep SVs: 10
Lat: N 42.38.9139
Lon: W 117.06.9139
Elev: 1503

DEPARTURE TIME (local): 10:37

*****PLEASE NOTE ANY SPECIAL PROBLEMS BELOW ON THIS SHEET*****
HLP RT-130 SERVICE SHEET (v3) (last revised 6/27/2007 DEJ)

Voltage CH 1: -49  CH 2: 0.0  CH 3: 0.0
Use Center 1-3 to recenter if any CH > +/- 1.5 volts Guralp: > +/- 2.5 volts STS-2. Check here.
Continue with recenter command (and update) until all channels are +/- 1.5 V (Guralp); 2.5 V (STS2)
Enter final mass position voltages: CH 1: 5.1  CH 2: 0.0  CH 3: 0.0

DAS Status: Control -> Status: (use Update to Refresh)
Acq: Start ON
Events: 6295
RAM: 100% of 4352  Increasing?
Disk1: 1938 of 1950  (Current)
Disk2: 945 of 1950  (Current)
Temperature: 34.4 °C
Power: 13.5
Ch: 123 DS: CC

CALIBRATION: Control -> Aux. Cntrl -> Test 1-3...... Wait quietly for 18 min.

STOP ACQUISITION: Control -> Status -> Stop Acq: Wait until disk is no longer in use, update status screen then remove and record time here: 11:55

Disks Removed? (circle one or both). Install new disk(s): Confirm that correct disk has been removed by checking disk content: Control -> Status: disk1/disk2.

ROUTINE SERVICE
Control -> RAM -> Clear:........... K
Control -> Reset DAS:............ K
Control -> Format Disk 1:........... K
Control -> Format Disk 2:........... K

REPLACEMENT (record details and new S/N below!)
Control -> Status -> GPS Status:........... (confirm lock?)
Configuration: Load new parameters only after GPS lock
Control -> RAM -> Clear:.............
Control -> Reset DAS:.............
Control -> Format Disk 1 & 2:..........

+++++++++++++++++++++++++++++++ WAVEFORM MONITOR: Control -> Monitor -> View: Record Midpoint(M) and Range(R)
CH 1: M Flat line max CH 2: M Flat line max CH 3: M Microseism? no Microseism? no Microseism? yes

START ACQUISITION: Control -> Status -> Start Acq.
DAS Status: use Update to Refresh
Acq: Start ON
Events: 2
RAM: 29 of 4352  Increasing?
Disk1: 0 of 1950 Mb  (Current)
Disk2: 0 of 1950  (Current)
Temperature: 41.6 °C
Power: 13.2
Ch: 123 DS: CC

GPS Status: GPS
Sec since LL: 00
Phase Diff (us): 1.5 usec
Mode: cycle
Status: locked SV's: 11
Lat: N 42° 33.9731"
Lon: W 119° 03.9119'
Alt(m): 01503

DEPARTURE TIME (local): 12:20

*PLEASE NOTE GENERAL STATE OF THE STATION AND ANY SPECIAL PROBLEMS IN SPACE BELOW*
All looks normal at station, but 552 mass positions are odd: ch 1 went way much off -5 V and ch 2-3 remain identical 0.0. When monitored, ch 1+2 are flat line pinned, ch 3 looks almost normal. Probably means one straight component (not e-w) is bad or pinned. But probably not pinned. Bad breakout box? Started acquisition anyway, with one questionable e-w channel.
HLP RT-130 SERVICE SHEET (v3) (last revised 6/27/2007 DEJ)

STATION: OR105 Month: 6 Day: 1 Year: 2008 ARRIVAL TIME (local): 11:00
Voltage CH 1: _______ CH 2: _______ CH 3: _______.
Use Center 1-3 to recenter if any CH > +/- 1.5 volts Guralp; > +/- 2.5 volts STS-2. Check here.
Continue with recenter command (and update) until all channels are < +/- 1.5 V (Guralp); 2.5 V (STS2)
Enter final mass position voltages: CH 1: _______ CH 2: _______ CH 3: _______.

DAS Status: Control -> Status: (use Update to Refresh) Time: _______
Acq: _______ Accurate? Y / N Time: _______
Events: _______ GPS Status: GPS
RAM: _______ Disk 1: _______ Increasing? Status: _______ SV's: _______
Disk 2: _______ (Current) Mode: _______
Temperature: _______ Lat: _______
Power: _______ Lon: _______
Ch: _______ Alt(m): _______

CALIBRATION: Control -> Aux. Cntrl -> Test 1-3:......Wait quietly for 18 min. _______
STOP ACQUISITION: Control -> Status -> Stop Acq: Wait until disk is no longer in use, update status screen then remove and record time here:

Disks Removed: 1.2 (circle one or both). Install new disk(s): Confirm that correct disk has been removed by checking disk content: Control -> Status: disk1/disk2.

ROUTINE SERVICE
Control -> RAM -> Clear: _______
Control -> Reset DAS: _______
Control -> Format Disk 1: _______
Control -> Format Disk 2: _______

REPLACEMENT (record details and new S/N below!)
Control -> Status -> GPS Status: _______ (confirm lock?)
Configuration: Load new parameters only after GPS lock
Control -> RAM -> Clear: _______
Control -> Reset DAS: _______
Control -> Format Disk 1 & 2: _______

WAVEFORM MONITOR: Control -> Monitor -> View: Record Midpoint (M) and Range (R)
CH 1: M _____ R _____ CH 2: M _____ R _____ CH 3: M _____ R _____
Microseism? _______ Microseism? _______

START ACQUISITION: Control -> Status -> Start Acq.
DAS Status: use Update to Refresh
Time: _______
Acq: _______
Events: _______
RAM: _______ Increasing? Status: _______ SV's: _______
Disk 1: _______ (Current) Mode: _______
Disk 2: _______ (Current) Lat: _______
Temperature: _______ Lon: _______
Power: _______ Alt(m): _______
Ch: _______ DS: _______

DEPARTURE TIME (local): 12:00 noon

*PLEASE NOTE GENERAL STATE OF THE STATION AND ANY SPECIAL PROBLEMS IN SPACE BELOW*

- Breakout box/cable problem, but we lacked new orange cable.
- STS2 sensor, cable/breakout box pulled and returned to HRS for testing. Cable/breakout box was very old IBM vintage, with history of multiple problems. To be returned to Quantum for repair and replacement with detectable breakout box.
HLP RT-130 SERVICE SHEET (v3) (last revised 6/27/2007 DEJ)

STATION: OR 105  Month: __  Day: __0  Year: 2008  ARRIVAL TIME (local): 13:49
Voltage CH 1: ___  CH 2: ___  CH 3: ___
Use Center 1-3 to recenter if any CH > +/-1.5 volts Guralp; > +/-2.5 volts STS-2. Check here ___
Continue with recenter command (and update) until all channels are < +/- 1.5 V (Guralp), 2.5 V (STS2) ___
Enter final mass position voltages: CH 1: ___  CH 2: ___  CH 3: ___  ___

DAS Status: Control -> Status: (use Update to Refresh)
Acq: Stop  ___
Events: 25000  ___
RAM: 19,640 of 4352 KB  Increasing? ___

DISKS
RAM: 19,640 of 4352 KB  Increasing? ___
Disk1: 8,415 of 19,50 MB  Y (Current) ___
Disk2: 8,415 of 19,50 MB  N (Current) ___

Power: 12.9 in. 0.35 bhp ___
Ch: 1 2 3  ___ DS: CC  ___

GPS Status: GPS
Sec since LL: 00:00:00:00:00  ___
Phase Diff (us): ___
Mode: Cycle  ___
Status: GPS 11 SVs: ___
Lat: N 43°38'30" 9730  ___
Lon: W 117°63'39"121  ___
Alt (m): 1505  ___

CALIBRATION: Control -> Aux. Cntrl -> Test 1-3  ___ Wait quietly for 18 min. ___

STOP ACQUISITION: Control -> Status -> Stop Acq: Wait until disk is no longer in use, update status screen then remove and record time here:  ___

Disks Removed: 1 2 (circle one or both)  Install new disk(s): Confirm that correct disk has been removed by checking disk content: Control -> Status: disk1/disk2.

ROUTINE SERVICE
Control -> RAM -> Clear: ___
Control -> Reset DAS: ___
Control -> Format Disk 1: ___
Control -> Format Disk 2: ___

REPLACEMENT (record details and new S/N below!)
Control -> Status -> GPS Status: (confirm lock?) ___
Configuration: Load new parameters only after GPS lock ___
Control -> RAM -> Clear: ___
Control -> Reset DAS: ___
Control -> Format Disk 1 & 2: ___

WAVEFORM MONITOR: Control -> Monitor -> View: Record Midpoint (M) and Range (R)
CH 1: M 465230 R 27.25  CH 2: M 49166 R 49.37  CH 3: M 47344 R 34508
Microseism?: N ___

START ACQUISITION: Control -> Status -> Start Acq.
DAS Status: use Update to Refresh
Events: 443  ___
RAM: 19,640 of 4352 KB  Increasing? ___
Disk1: 8,415 of 19,50 MB  Y (Current) ___
Disk2: 8,415 of 19,50 MB  N (Current) ___
Temperature: 48.0 C ___
Power: 12.9 in. 0.35 bhp ___
Ch: 1 2 3  ___ DS: CC  ___

GPS Status: GPS
Sec since LL: 00:00:00:00:00  ___
Phase Diff (us): ___
Mode: Cycle  ___
Status: GPS 11 SVs: ___
Lat: N 43°38'30" 9730  ___
Lon: W 117°63'39"121  ___
Alt (m): 1505  (project time) ___

DEPARTURE TIME (local): 5'26 PM ___

"PLEASE NOTE GENERAL STATE OF THE STATION AND ANY SPECIAL PROBLEMS IN SPACE BELOW"
- sensor replaced
- GPS antenna replaced w/new reflect antenna
HLP RT-130 SERVICE SHEET (v4) (last revised 20080716 MJF)

STATION: OR105 Month: 9 Day: 14 Year: 2008 ARRIVAL TIME(local): 8:30

Voltage CH 1: -0.9 CH 2: -1.7 CH 3: 3.6

Use Center 1-3 to recenter if any CH > +1.5 volts Guralp; > +/2.5 volts STS-2. Check here.
Continue with recenter command (and update) until all channels are < +/1.5 V (Guralp); 2.5 V (STS2)
Enter final mass position voltages: CH 1: -0.9 CH 2: +0.0 CH 3: +1.5

DAS Status: Control -> Status: (use Update to Refresh)
Time: 2008: 258:15:34:53 Accurate: Y/N
Acq: Start ON
Events: 1,622
RAM: 2.772 of 4,352 KB Increasing?
Disk1: 684 of 1,950 MB (Current)
Disk2: 0 of 1,950 MB (Current)
Temperature: 26.8°C
Power: 13.4 3.3
Ch: 123 DS: CC

GPS Status: GPS
Time: 2008: 258:15:36:20
Sec since LL: 37 min
Phase Diff.(us): -1,120
Mode: cycle
Status: Sleep SV’s: 11
Lat: 42:38:5730
Lon: 117:03:9120
Alt(m): 150.4


STOP ACQUISITION: Control -> Status -> Stop Acq: Wait until disk is no longer in use, update status screen then remove and record time here: 8:40 AM

Once disks are removed (circle one or both). Install new disk(s): Confirm that correct disk has been removed by checking disk content: Control -> Status -> disk1/disks2.

IMPORTANT NOTE: Disk 1 must be current once acquisition starts. If changing both disks, then insert disk1 first, and leaving disk2 slot empty, dump RAM to disk1 (Control -> RAM -> Dump RAM), then insert disk2 and proceed.

ROUTINE SERVICE
Control -> RAM -> Clear..........
Control -> Reset DAS............... 
Control -> Format Disk 1...........
Control -> Format Disk 2...........

REPLACEMENT (record details and new S/N below!)
Control -> Status -> GPS Status:.... (confirm lock?)
Configuration: Load new parameters only after GPS lock
Control -> RAM -> Clear............
Control -> Reset DAS:............... 
Control -> Format Disk 1 & 2:........

WAVEFORM MONITOR: Control -> Monitor -> View: Record Midpoint(M) and Range(R)
CH 1: M 1182 R 275 CH 2: M 253 R 139 CH 3: M 1323 R 184
Microseism? 
Microseism?
Microseism?

START ACQUISITION: Control -> Status -> Start Acq.
DAS Status: use Update to Refresh
Time: 2008: 258:16:05:38
Acq: Start ON
Events: 3
RAM: 39 of 4,352 KB Increasing?
Disk1: 0 of 1,950 MB (Current)
Disk2: 0 of 1,950 MB (Current)
Temperature: 29.3°C
Power: 13.7 3.3
Ch: 123 DS: CC

GPS Status: GPS
Time: 2008: 258:16:06:40
Sec since LL: 0
Phase Diff.(us): 0
Mode: cycle
Status: locked SV’s: 11
Lat: 42:38:5730
Lon: 117:03:9120
Alt(m): 150.2 m

DEPARTURE TIME(local): 9:10

*PLEASE NOTE GENERAL STATE OF THE STATION AND ANY SPECIAL PROBLEMS IN SPACE BELOW*

All normal at station. Antenna already in place has white ring. Not swapped. Tarp is new.
HLP RT-130 DEMOBILIZATION SHEET (v4) (last revised 20090904 MJF)

STATION: OR105  Month: 9  Day: 13  Year: 2009  ARRIVAL TIME(local): 8:38 am
Voltage CH 1: -1.5  CH 2: -0.2  CH 3: +1.2
Use Center 1-3 to recenter if any CH > +/-1.5 volts Guralp; > +/-2.5 volts STS-2. Check here
Continue with recenter command (and update) until all channels are < +/-1.5 V (Guralp); 2.5 V (STS2)
Enter final mass position voltages: CH 1: ____  CH 2: ____  CH 3: ____

DAS Status: Control -> Status: (use Update to Refresh)
Acq: start ON
Events: 3378
RAM: 1567 43532 kb  ✓ Increasing?
Disk1: 1448 of 33911  ✓ (Current)
Disk2: 0 of 1950  ✓ (Current)
Temperature: 33.0
Power: 13.3 in, 0.333 bkp, 00.000 cmhGR
Ch: 1/2/3  DS: C.C

GPS Status: GPS
Sec since LL: 00:00:00:00
Phase Diff.(us): +00.000000
Mode: cycle
Status: Locked  SVs: 11
Lat: N 48:38:97.32
Lon: W 117:03:91.82
Alt(m): 150.3

CALIBRATION: Control -> Aux. Cntrl -> Test 1-3:.... Wait quietly for 18 min. 9:45 am - 9:03 am

STOP ACQUISITION: Control -> Status -> Stop Acq: Wait until disk is no longer in use, update status screen then remove and record time here: 2009:256:16:04:51
✓ Remove disk(s) and label with station ID, date, disk #, & final data amount (in Mb)

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DEMOBILIZE STATION

SENSOR
☐ If sensor is a 3T: lock masses twice with power on using breakout box; confirm masses pegged; disconnect breakout box (NB: May need to connect AUX power cable to breakout box first, or use HCU with power cable)
☐ If sensor is an STS2: disconnect breakout box; lock masses with power off
☐ Confirm alignment of sensor with vault alignment line. If not aligned, enter misorientation value: 
☐ Remove sensor; enter sensor information: Type: STS-2  Serial #: 19151
☐ Confirm assumed declination from installation (as written on sensor pad): 15°40'  89°
☐ Confirm Brunton compass declination is set to same value as that written on pad
☐ Measure orientation of vault alignment line (N-S for Guralp; E-W for Streichheisen). Enter orientation:
If measured orientation does not appear to be correct, double check measurement and confirm with at least one other team member!
☐ Confirmed  DE/

DATALOGGER
☐ Disconnect power box
☐ Disconnect datalogger (all cables); enter serial #: 98FA
☐ Disconnect batteries; cover terminals with plastic caps or tape
☐ Disconnect solar panels and GPS; enter GPS serial #: 8072

*PLEASE NOTE GENERAL STATE OF THE STATION AND ANY SPECIAL PROBLEMS IN SPACE BELOW*