HLP Q330 Station Installation (Last revision 05/21/2007 DEJ)

Connect cables:
1) Build power system
2) Connect Q330 (Qnet) to bale
3) Q330 (GPS) to GPS
4) Power to Q330
5) Cline to Q330 (console)

[Warning: Q330 does not supply power to Cline, and cable draws continuous power. Disconnect cable from Cline when not in use.]

Cline > Q330 Beta > Cmds > Cloning
- Select file to clone (STS2 (HL301) or Guralp (HLG01)
- Station names
  - Click "Palm overrides 330 in dropdown"
  - Check "Edit/Verify"
- IP Addresses: Un-Check "Edit/Verify"
- Send
- Station Names > DP4 > New Entry Station Name in ALL CAPS, up to 6 characters
- Save/Reboot
- Views (from dropdown) > Data Recording > DP3
- Confirm that Station is same as sensor clone name (e.g. HLG01)
- Views (from dropdown) > Data Recording > DP4
- Confirm that station name and sample rates are correct

Connect Sensor to Q330. Verify that sensor configuration matches sensor type.

Unlock sensor. For Guralp, to unlock from Cline: Views > Sensor, Set duration = 10 sec. > Unlock A.
- Views > Sensor (click refresh) > Mose Positions (V=15 < 15 (Guralp), < 25 (STS-2))
- Voltage (V): CH1: 1.5V CH2: 2V CH3: 3V
- Set Duration = 10 and click Center A command if any channel > 15 (Guralp), > 25 (STS-2) and click Refresh
- Views > Quickview (waveform monitor) > chn 1, 2, 3 > Start: Write down Max Min Midpoint (click "stop" to record values)

CH 1: 2.55 CH 2: 2.5 CH 3: 2.65

- Views > System
  - Last GPS lock: 01/11/2018 01:00
  - Phase Error: 0.6
  - Clock Quality: 1.0
  - Input volts: 120V
  - Last boot: 12/20/17 2:45 PM

- Status > GPS (confirm GPS lock)

Q330 Software Version: 2.34.0

- Status > Data Port TxRx > Data 4
  - Packet Buffer: 753
  - Increasing (refresh)

- CMDs > Baler cmd > Turn on Baler: "Send balecmd" Check bale is on (solid green light)

- Status > Data Port TxRx > Data 4
  - Packet Buffer decreases to zero
  - Packets Sent: 2319

(Note: if the Q330 does not transfer data to the Baler by clearing the Baler "Association" by holding the Baler Attention button until the light turns solid red (~5 s). Release the button and then, after the light begins to flash green, press the Attention button once to shut down the Baler. Repeat the process once more, ending in Baler shutdown. Press Attn button once to turn Baler on and check that data transferred)

- Status > General > Total ReSync: 1

- Commands > Make Docfile, add station name (STA) to default filename, Conf-Yr-Mo-Dy-Q330_STA, and delete "Conf" from start of filename (or filename will be too long for station names 4 or more characters in length)

DEPARTURE TIME (local): 5:36

*PLEASE DETAIL SPECIAL PROBLEMS ON BACK OF THIS SHEET, AND NOTE BELOW*
OR093

<station probably serviced in October 2007>

this is a placeholder; scanned service sheet will be added to document bundle

MDL 05/12/08
HLP Q330 SERVICE SHEET (v6) (Last revised 06/22/07 DEJ)

STATION: 02093  Month: 05  Day: 4:30  Year: 2005  ARRIVAL TIME (local): 14:20 PM
OPERATOR: Long Name:
SENSOR MASS POSITION: > Views > Sensors * Boom Positions
1:  8  2: 14  3: 29
Use Center A to recenter if any CH > +/-15 for Guralp; > +/-25 for STS-2. Check here □
Continue with Center A command (and update) until all channels are < +/-15 or 25.
Enter final mass positions: 1: -9  2: 13  3: -15

> Views > Data Recording > DP3 *Station: 01503  > DP4 *Station: 02093
[DP3 Station should match program (HLG?? for Guralp, HLS?? for Streekelsen), DP4 Station should match station name]

> Views > System: (use Refresh to Update)
Last GPS Lock: 170 mins ago
Phase error: 0.000005
Clock quality: Lock (synchronous)
Input volts: 11.3
Temperature: 14
Last Resync: 2005-11-11 21:26:05

> Views > System: Turn GPS ON. Status > GPS
Locked? □
Satellites viewed: 12
Satellites used: 4
Time: 22:35:05
Date: 22-10-2005
Latitude: 42.1993887
Longitude: 119.1348050
Elev (m): 1480.0

Calibration and Waveform Monitor

<table>
<thead>
<tr>
<th>Cmds</th>
<th>Calibration: DURATION bar: 240 s (usually labeled &quot;min&quot; on Clie); SETTLING bar: 6 min; TRAILER bar: 1 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>Cmds &gt; Calibration &gt; Waveform &gt; STEP: AMPLITUDE bar: +24 dB Guralp or -18 dB STS2; STEP POLARITY: Positive</td>
</tr>
<tr>
<td>□</td>
<td>Cmds &gt; Calibration &gt; CALIBRATE CHANNELS: Select all 3 channels; START: 1 minute; START</td>
</tr>
</tbody>
</table>

Sit Quietly for 12 min and note local start time here: □ Click Stop, then O.K. when finished.

> Views > Quickview (waveform monitor) > chan: 1, 2, 3 > Start: Write down Max Min Midpoint (click "stop" to record values)

CH 1: 2205, 1711, 130.9  CH 2: 971, 359, 12132.9  CH 3: 191, -304, 101.0
□ Microseisms visible? □ (check if yes)

□ Status > Data Port Txf > Data4 *Packet Buffer Increasing? (press Refresh)
□ Cmds > Baler > Send command to baler (Baler should turn on, with packets being sent)
□ Status > Data Port Txf > Data4 *Packet Buffer (Decreases to zero)? Packets Sent: 1068888
□ Commands > Baler > Send command to baler (wait for slow green blink = idle)
□ Swap out Baler
□ Status > Data Port Txf > Data4 *Packet Buffer Decreasing to zero? Packets Sent: 10689010
[Note: If the Q330 does not transfer data to the Baler try clearing the Baler `Association` by holding the Baler Attention button until the light turns solid red (~5 sec). Release the button and then, after the light begins to flash green, press the Attention button once to shut down the Baler. Repeat the process once more, ending in Baler shutdown. Press Atttn button once to turn Baler on and check that data transferred.]

□ Status > General *Total Resyncs: 799
□ Commands > Make Docfile (A bug here means you should delete "Conf._ at the start of the default filename, append the station name to end of the remaining default filename and click OK. Check that name is correct.)

DEPARTURE TIME (local): 4:39 PM

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

Raining during servicing. Otherwise, fine!!
HLP Q330 SERVICE SHEET (v8) (last revised 20080716 MJF)

STATION: 990909  Month: 9  Day: 9  Year: 2008  ARRIVAL TIME(local): 5:55 pm
SENSOR MASS POSITION:  Views > Sensors  *Boom Positions
  1:  __2__  2:  __2__  3:  __2__

Use Center A to recenter if any CH > +15 for Guralp; > +25 for STS-2. Check here.
Continue with Center A command (and update) until all channels are < -15 or -25.
Enter final mass positions: 1:  __-1__  2:  __-1__  3:  __-1__

Views > Data Recording > DP3 *Station: 11 (50?)  > DP4 *Station: 0K (93)
[DP3 Station should match program (HLG?? for Guralp, HLS?? for Streckeisen). DP4 Station should match station name]

Views > System: (use Refresh to Update)
Last GPS Lock: 5:00 AM 2/23/2008
Phase error: 70.00002
Clock quality: 0.0 lock factor (K)
Input volts: 11.0 V
Temperature: 3.0 C
Last Boots: 2/2007 - 11 - 21 23:50
Last Resync: 2/2007 - 11 - 21 23:50

Views > System: Turn GPS ON. Status > GPS
Locked? [X] Satellites viewed: 9  Satellites used: 5
Time: 01:04:13
Date: 01/09/2008
Latitude: 42.817650
Longitude: 119.1797750
Elev (m): -428.5

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Calibration, Recheck of Sensor Mass Positions, and Waveform Monitor

Cmds > Calibration: DURATION bar: 6 min (if running Q330Beta V1.41)  SETTLING bar: 6 min  TRAILER bar: 5
Cmds > Calibration: Waveform > STEP: AMPLITUDE bar: -24 db Guralp or -16 db STS2  STEP POLARITY: Positive
Cmds > Calibration: CALIBRATE CHANNELS:  Select all 3 channels; START: 1 minute; IStart.
Sit quietly for ~18 min and note local start time here:

Views > Sensors: Use Center A to recenter if any CH > +15 for Guralp; > +25 for STS-2. Check here.
Enter final mass positions: 1: __ 2: __ 3: __

WAVEFORM MONITOR: Views > Quickview > chan1,2,3 > Start: Enter Max Min Midpoint (click "stop" to record values)
CH 1 1724 1115 178 8 CH 2 412 15 84 194 8 CH 3 335 2 13 7 208 0
Microseism? •Microseism? •Microseism? •

Status > Data Port Txfr > Data4 *Packet Buffer, Increasing? (press Refresh)
Cmds > Baler > I Send command to baler (Baler should turn on, with packets being sent)
Status > Data Port Txfr > Data4 *Packet Buffer, Decreases to zero?  Packets Sent: 26701667
Commands > Baler Cmds > I Turn Off Baler (wait for slow green blink = idle)
Swap out Baler
Status > Data Port Txfr > Data4 *Packet Buffer, Increasing?
Cmds > Baler > I Send command to baler (Baler should now be on)
Status > Data Port Txfr > Data4 *Packet Buffer, Decreases to zero?  Packets Sent: 26701667
(Note: If the Q330 does not transfer data to the Baler by trying the Baler "Association" by holding the Baler Attention button until the light turns solid red (~6 sec). Release the button and then, after the light begins to flash green, press the Attention button once to shut down the Baler. Repeat the process once more, ending in Baler shutdown. Press Attn button once to turn Baler on and check that data transferred.)

Status > General > Total Resyncc: 7 49
Commands > Make Doc file (A bug here means you should delete "Conf." at the start of the default filename, append the station name to end of the remaining default filename and click OK. Check that name is correct.)

DEPARTURE TIME (local): 6:15 pm

*PLEASE NOTE GENERAL STATE OF THE STATION AND ANY SPECIAL PROBLEMS IN SPACE BELOW*
HLP Q330 DEMOBILIZATION SHEET (v3) (last revised 20090904 MJF)

STATION: QRO93 Month: 9 Day: 17 Year: 2009 ARRIVAL TIME (local): 10:45
OPERATOR: MF, HF, EW, SH, SAB POWER: BATT-1: 13, G G BATT-2: 13, G G
Q330 S/N: 1410 OLD BALER S/N: 1174009

SENSOR MASS POSITION: > Views > Sensors > Boom Positions
1: -44 2: -10 3: -19

Use Center A to recenter if any CH > +/-15 for Guralp; > +/-25 for STS-2. Check here ✓
Continue with Center A command (and update) until all channels are < +/-15 or 25.
Enter final mass positions: 1: -10 2: -11 3: -9

> Views > Data Recording > DP3 > Station: HLS03 > DP4 > Station: QRO93
[DP3 Station should match program (HLG7?? for Guralp, HLS?? for Streckeisen), DP4 Station should match station name]

> Views > System: (use Refresh to Update) Last GPS Lock: 0 min
Phase error: -0.000001
Clock quality: 3G Lock: 1
Input volts: 13.05 Y
Temperature: 21.0°C
Last Boot: 2009-09-17 12:48:29
Last Resync: 2009-09-16 12:48:46

Calibration
✓> Cmds > Calibration: DURATION bar 6 min (if running Q330Beta V.1.44g); SETTLING bar 6 min.; TRAILER bar: 5
✓> Cmds > Calibration > Waveform > STEP: AMPLITUDE bar: -24 dB Guralp or 18 dB STS2: STEP POLARITY: Positive
✓> Cmds > Calibration > CALIBRATE CHANNELS: !Select all 3 channels; START: 1 minute; !Start .

Sit quietly for ~18 min and note local start time here: 00:00

✓> Status > Data Port Txf > Data4 > Packet Buffer ✓ Increasing? (press Refresh)
✓> Cmds > Baler > !Send command to baler (Baler should turn on, with packets being sent)
✓> Status > Data Port Txf > Data4 > Packet Buffer (Decreases to zero)? Packets Sent: 20 89
✓> Commands > Baler Cmds > !Turn Off Baler (wait for slow green blink = idle)

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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: STS2 Serial #: 19131
✓ Enter assumed declination from installation (as written on sensor pad): 15° 40' E
✓ Confirm Brunton compass declination is set to same value as that written on pad — see — incorrect !
✓ Measure orientation of vault alignment line (N-S for Guralp; E-W for Streckeisen). Enter orientation: 1995° E
If measured orientation does not appear to be correct, double check measurement and confirm with at least one other team member!

DATALOGGER
✓ Disconnect power box
✓ Disconnect datalogger (all cables); enter serial #: 1410
✓ Label baler with station name and date
✓ Disconnect batteries; cover terminals with plastic caps or tape
✓ Disconnect solar panels and GPS; enter GPS serial #: 072760194

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