Date 1/14/2015 Station 800 

**INSTALL SHEET (Q330 Surface Site with Wilan Telemetry)**

Local Date/Time: 9:00 AM MST GMT Date/Time: 16:00 GMT

Field Team: Tanner, Daniel, Vuk

GPS Location of Site: _____

**Equipment**

Sensor S/N: 4030 1 Sensor Type: STS-2

Q330 S/N: 6000000A27B47AA6 Q330 TagID: 1067

~~Wilan S/N:~~ Q330 IP: 204.114.29.213 Wilan IP: _____

Clock S/N: _____ Baler Tag: 05246

Baler S/N: _____ GPSX-1001-5: DY5A10105

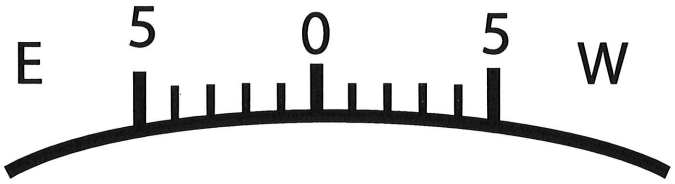
Switch label: 800 sw1

**INSTALL SENSOR**

__Check that compass declination is set to 8° E

Place an arrow on the figure below showing where the declination marks is position on this compass (cross check against above to avoid sign errors)

Aligned using marks on granite pad.




*Guralp 3T*

N/A
- ___Add layers of landscaping timber to provide clearance for this larger sensor
- ___Sweep any dirt from the top of the concrete base
- ___Attach the alignment jig and use it to simultaneously level and orient the sensor
- ___Lock feet of sensor
- ___Connect the sensor cable to the sensor and then to the DAS (leave enough slack to allow you to reattach the alignment jig)
- ___Reattach the alignment jig and fill out the alignment table below (4 measurements). If initial orientation is off by more than 1 degree align and relevel before making final measurements.

*Trillium or STS2*

- X Sweep any dirt from the top of the concrete pad
- X Use a ruler and sharpie to scribe an alignment line on the concrete base for this sensor
- X Connect the sensor cable to control box and sensor
- X Align the sensor using the mark and the alignment rod, level, repeat until level and aligned (fill out table below)

*ALL SENSORS*

- N/A Cut a length of 2" fire hose to run from sensor vault to DAS enclosure
- N/A Use a fish tape to pull the DAS to control box cable through the fire hose and connect both ends
- X Unlock masses
- X Center masses
- X Working with your partner verify the sensor is functional with a stomp test
- N/A Install vault cover with screws
- N/A Cover vault with at least 2 layers of black plastic
- N/A Bury sensor using sandbags filled with dirt, mound dirt ton top of vault cover, and add mulch to top

Use Brunton compass adjacent to sensor measurement jig, measuring North (N) and South (S). Reverse the jig and repeat recording the 4 measurements below. Record to your best guess of the nearest 0.1 degree. If orientation is more than 1 degree away from NS try to realign. For Trillium and STS2 sensors use left and right side of alignment rod

| Brunton Left (N) | Brunton Left (S) | Brunton Right (N) | Brunton Right (S) |
|---|---|---|---|
| | | | |

**Q330 Hardware Setup**

___Install solar panels on post using brackets and wood screws.
___Reconfigure guy wires if necessary
N/A ___Place the dog house near the solar panel pole with the door facing downhill to allow water to drain
___Install GPS on top of pole (must see the sky)
___Install Wilan radio on the pole (make sure the antenna is on the side facing Yates)
X Run GPS and network cables and connect to Q330 (do not bundle up until testing is finished)
X Connect the baler to the Q330

**Power system tests**:

Initial battery voltage (V) 12.5
/ Solar panel output test:
Sun condition when tested (circle one): (a) sun on panels, (b) cloudy, (c) sun on panels at low angle
Panel 1 output (V) N/A
Panel 2 output (V) N/A

Equipment power up:

N/A Make sure power box is set for sealed battery mode
X Plug battery into power box. Record voltage showing on LCD display (V) 12.5
N/A Connect both solar panels to power box. Record voltage on display (V) /
X If all looks ok, connect the Q330 to power (Note with Guralp unlock cannot happen till now)
X Check here when the GPS LED goes yellow

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**Q330 Operations with the Clie (program Q330B147 on the SONY Clie PDA)**

☐ Clone the program into the Q330

**Commands->Cloning**
>*Select file to clone based on sensor type*
>Station names
>Palm overrides 330
>"Check" Edit/Verify
>IP Addresses
>Palm overrides 330
>"Un-Check" Edit/Verify
!Send
>Station Names
>DP4 >New
!*Enter current station name (All CAPS and up to 5 letter/number characters)*
!*Ok*
!Save/Reboot
!Ok DP1

☒ **Views ->Data Recording ->~~DP3~~** *Station name 800 (SENSOR TYPE)

**Note:** DP3 station name should correspond to sensor type.

☒ **Views ->Data Recording ->DP4** *Station 800 (STATION NAME) *Net XG (NETWORK CODE)

☒ Connect sensor to Q330 AFTER Cloning the Q330 for correct sensor type

Date 1/14/2015 Station 800

☒ ***SENSOR Unlock Procedure***

CMG-3T: Attach extra power to 3T BOB. Use the BOB to test if the sensor is locked. Press and hold both the *Lock* and *Enable* Buttons for about 10 seconds. Watch the LED light (4-6 blinks in ~3 sec = Locked: indicates OK to use.)

Next, unlock the sensor. Press and hold both the *Unlock* and *Enable* Buttons for about 10 seconds. Release buttons when the LED light illuminates (2 blinks and solid red indicates unlocking.)

**TURN OVER**

STS-2: Use an STS-2 screwdriver to smoothly unlock all 3 elements. Give the STS-2 and initial centering pulse using the button on the host box.

**Views** >Sensor: !Center A (STS-2)

☑ **Views->System:** *Main Current: 75 mA *Input Volts: 12.3 (>12.5 full sun, >11.5 no sun)
*Ant. Current: N/A *Temp: 16°C CMT
*Q330 SW Vers: 1.145 *Last Boot: 1/14/15 16:23 *Last Resync: 1/14/15 16:24

☒ **Views -> Clock:** *Last Lock: 1/17/2015 21:52:48 *Phase error: 0 ms
*Clock Quality: 100%

☒ **Status ->GPS** *GPS Time: 21:52:49 *GPS Date: 1/17/2015 (given in DD/MM/YYYY)
*Height: 1640.8m *Latitude: 44°21' 5.904"N *Longitude: 103° 45' 4.248"W

filled out on 1/17/2015

☑ **Views ->Sensors** !Refresh *Boom Positions (within +/-15, i.e. within +/-1.5 volts)

1 128 2 -32 3 16

** If the Boom Positions are out – recenter sensor: **Views ->Sensors** !Center A

☑ **Views ->Quickview ->chan 1,2,3 -> !Start** Stomp test:
ch 1: ☒ OK
ch 2: ☒ OK
ch 3: ☒ OK (stomp seen?) **-> !Stop**
Write values:
ch 1: max____min____ RMS____
ch 2: max____min____RMS____
ch3 max____ min____ RMS____
(Values should be ~10,000 counts)

☑ **Status ->Data Port Txfr ->Data4** *Packet buffer used (increasing?) (YES) NO

☑ **Commands ->Baler Cmds** Turn on baler power control
☒ !Send Baler Command (Baler should turn on) Do NOT use ATTN button to power baler
**Note:** If the baler times out BEFORE finishing REPEAT

☑ **Status ->Data Port Txfr ->Data4** *Packet Buffer (Decreases to zero) (YES) NO
*Data packets sent 1316

**NOTE:** If the Q330 does not transfer data to the Baler try clearing the Baler "association" by holding in the baler Attention button in 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 and then try to transfer data to the Baler.

☑ **Status->General***Total ReSyncs 181

☒ **Views ->Sensor:** *Boom Positions (less than +/-15, i.e. less than +/-1.5 volts)

1 -3 2 -1 3 5

☐ **App ->Make Docfile** !OK to default filename Conf-YrMoDy-Q330 _____

**SITE NOTES (Anything strange or notable)**

# Checklist

**Paperwork**
X Completed pages 1-3
**Sensor**
N/A Compass declination set and recorded
X Oriented → used markings
X Level
X Feet locked
**Power system**
X Battery terminals tight
X All power box connection tight
X Any external power cables to box secured from rodent damage
X Cables in the air have drip lines
X No cables are on the ground without protection
N/A SOLAR: panel boxes closed
__ AC: battery minder plugged in powered
**Q330**
X Completed paperwork on pages 1-2
X Acquiring data
X All unused connectors capped
**Site**
N/A
__ Multiple layers of plastic on top of vault
__ Plastic configured to not collect water around sensor vault
__ Vault well covered with sandbags and dirt (6 inches minimum)
__ Cables all secured
__ Dog house door is secured
__ Cable entry plugged with plumber's putty

Inventory

- STS-2, 2 cables, breakout
- Q330+ Bailer
- Q330 serial → Baler + power
- Q330 Qnet & ethernet cable
- Power box
- Battery + Battery tender
- Tranceiver
- Network switch
- Power switch

GPS cable + TTL → RS-232 converter
Power cable

- Old Italian 1-component sensor (silver box near our STS-2)